AD0504046AE

Portable CD Player

SL-CT520GK / SL-CT520GT

Colours

(A).....Blue Type

(P).....Pink Type [SL-CT520GK only]

(S).....Silver Type

(Y).....Yellow Type [SL-CT520GK only]

Please use this manual together with the service manual for Model No. SL-CT520EB/EG/EE/SG, Order No. AD0502004C0.

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1. Note

- This simplified service manual is provided to indicate the differences between the original model No. SL-CT520SG-S and the subsequent model No. SL-CT520GK-A/P/S-Y, SL-CT520GT-A/S.

2. Replacement Parts List

Note:

- Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

- The parenthesized indications in Remarks columns specify the areas and colours.
(A): Blue Type
(P): Pink Type
(S): Silver Type
(Y): Yellow Type

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- All parts are supplied by SPC.

Ref.No.	Change of Parts No.		Part Name & Description	Pcs	I
	SL-CT520SG-S	SL-CT520GK			
CABINET PARTS					
13	RGN2805-H	RGN2810-H1	NAME PLATE	1	⚠
ACCESSORIES					
A2	L0BAB0000190	L0BAB0000183	STEREO EARPHONES	1	
A3	N2QCBD000048	N2QCBD000049	WIRED REMOTE CONROL	1	
A5	RFEA444Z-S	RFEA473T-1S	AC ADAPTOR	1	⚠
A6	RQT7819-Z	------	OPERATING INSTRUCTIONS	1	DE
A7	K2DA42E00001	------	POWER PULG ADAPTOR	1	DE
PACKING MATERIALS					
P2	RPK2325	RPK2236	GIFT BOX	1	(S
P2	RPK2325	RPK2287	GIFT BOX	1	(A
P2	RPK2325	RPK2288	GIFT BOX	1	(P
P2	RPK2325	RPK2289	GIFT BOX	1	(Y
P3	RPQ1849	RPQ1848	PAD	1	

Ref.No.	Change of Parts No.		Part Name & Description	Pcs	I
	SL-CT520SG-S	SL-CT520GT			
CABINET PARTS					
13	RGN2805-H	RGN2813-H	NAME PLATE	1	⚠
ACCESSORIES					
A2	L0BAB0000190	L0BAB0000183	STEREO EARPHONES	1	
A3	N2QCBD000048	N2QCBD000049	WIRED REMOTE CONROL	1	
A5	RFEA444Z-S	RFEA439G-U	AC ADAPTOR	1	⚠
A6	RQT7816-B	RQT7820-K	OPERATING INSTRUCTIONS	1	CH
A6	RQT7817-K	------	OPERATING INSTRUCTIONS	1	DE
A6	RQT7819-Z	------	OPERATING INSTRUCTIONS	1	DE
A7	K2DA42E00001	------	POWER PULG ADAPTOR	1	DE
PACKING MATERIALS					
P2	RPK2325	RPK2233	GIFT BOX	1	(S
P2	RPK2325	RPK2266	GIFT BOX	1	(A
P3	RPQ1849	RPQ1850	PAD	1	

F0504KH

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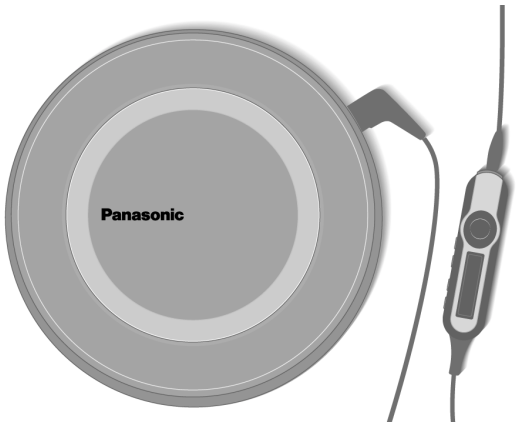
AD0502004C0

Service Manual

Portable CD Player

COMPACT disc DIGITAL AUDIO



SL-CT520EB
SL-CT520EG
SL-CT520EE
SL-CT520SG

Colours

(A).....Blue Type

(P).....Pink Type [SL-CT520SG only]

(S).....Silver Type

(Y).....Yellow Type [SL-CT520SG only]

Specifications

Audio (CD-DA)
Sampling frequency: 44.1 kHz
No. of channels: 2 channels (left and right, stereo)
Frequency response: 20 to 20,000 Hz (+0.5 dB to –7.0 dB)
Headphones output level: RMS max. 8 mW+8 mW/16 Ω (adjustable)

Pickup
Light source: Semiconductor laser
Wavelength: 780 nm

MP3
Supported bit rates (Supports variable bit rates): 32 kbps to 320 kbps (128 kbps is recommended)
Supported sampling frequency: 48 kHz/44.1 kHz/32 kHz
Maximum number of items (total no. of albums and tracks): 999
Maximum album levels: 100

General
Operational temperature range: 0 – 40 degree
Rechargeable temperature range: 5 – 40 degree
Power supply:
DC input (via included AC adaptor); DC 4.5 V
AC adaptor input;
SL-CT520EB; AC 220 - 240 V, 50/60 Hz
SL-CT520EE/EG; AC 220 - 230 V, 50/60 Hz
SL-CT520SG; AC 110 - 127/220 - 240 V, 50/60 Hz
Power consumption:
Using AC adaptor (MP3/CD-DA); 0.8 W/0.8 W
Recharging; 2.7 W

Play time:
Using on a flat stable surface at 25 degree, EQ is off, Hold is on, Anti-skip is on POS 1 (CD-DA), recommended bit rate (MP3:128 kbps), and the Digital Re-master is off (MP3). Play times are in hours and approximate.

Batteries used:	MP3/CD-DA
2 alkaline batteries (LR03);	Approx. 45/26 h
2 alkaline batteries (LR6);	Approx. 110/60 h
4 alkaline batteries (2 LR03 + 2 LR6);	Approx. 155/86 h
2 optional rechargeable batteries;	Approx. 30/16 h
2 optional rechargeable and 2 alkaline batteries (LR6);	Approx. 140/76 h

• The play time may be less depending on the operating conditions.
• Play time will be considerably reduced when playing CD-RW.

Recharging time: Approx. 3.5 to 4.5 h
Dimensions (W × H × D): 136.7x19.9x136.7 mm
Mass: 179 g (with batteries)
155 g (without batteries)

Notes: Specifications are subject to change without notice.
Mass and dimensions are approximate.

Note on CD-R and CD-RW
For CD-DA format, use a music disc and finalize* it after recording. The unit may not be able to play some discs due to the condition of the recording.
* A process performed after recording that enables CD-R/CD-RW players to play audio CD-R and CD-RW.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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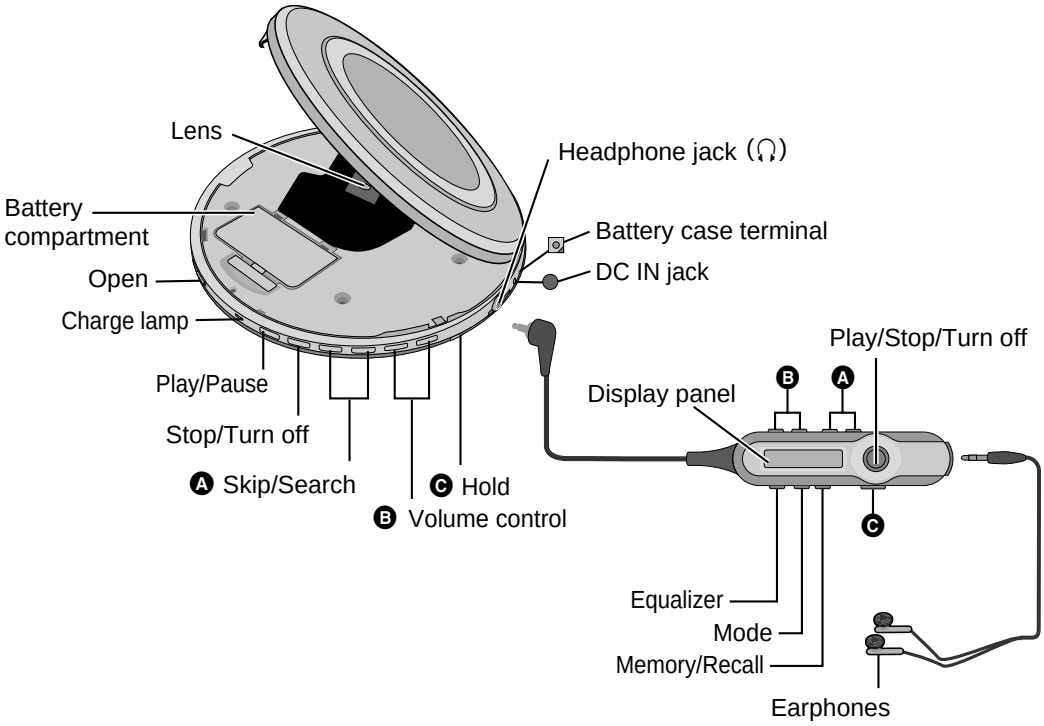
1 Accessories

- AC adaptor for SL-CT520EB
  (RFEA435B-S).....1 pc.
- AC adaptor for SL-CT520EE/EG
  (RFEA431E-S).....1 pc.
- AC adaptor for SL-CT520SG
  (RFEA444Z-S).....1 pc.
- Stereo earphones except for SL-CT520SG
  (L0BAB0000183).....1 pc.
- Stereo earphones for SL-CT520SG
  (L0BAB0000190).....1 pc.
- Wired remote control except for SL-CT520SG
  (N2QCBD000049).....1 pc.
- Wired remote control for SL-CT520SG
  (N2QCBD000048).....1 pc.
- External battery case
  (RFA2666-H).....1 pc.
- Rechargeable batteries (with case) for SL-CT520EE only
  (RFKHHR4AGE).....2 pcs.
- Rechargeable batteries (with case) for SL-CT520SG only
  (RFKHHR4AGTB).....2 pcs.
- Power plug adaptor for SL-CT520SG only
  (K2DA42E00001).....1 pc.

2 Location of Controls



3 Precaution of Laser Diode

CAUTION:
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

CAUTION: This product utilizes a laser diode with the unit turned “on”, invisible laser radiation is emitted from the pick-up lens.
Wave length: 780 nm
Maximum output radiation power from pick-up: 100 μW/VDE

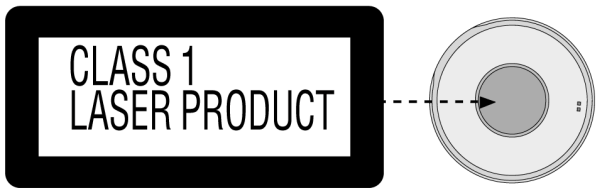
Laser radiation from the pick-up unit is safety level, but be sure the followings:

1. Do not disassemble the pick-up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick-up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick-up lens for a long time.

ACHTUNG: Dieses Produkt enthält eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit adgestrahit.
Wellenlänge: 780 nm
Maximale Strahlungsleistung der Lasereinheit: 100 μW/VDE

Die strahlungan der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werksseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.



(Bottom of product)

ADVARSEL-USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGA UNSÆTTELSE FOR STRÅLING.
VARO! AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSATEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VORSICHT-UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.
VARNING-OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
DANGER-INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.
ADVARSEL-USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
RQLS0244
A pleine puissance, l'écoute prolongée du baladeur peut endommager l'oreille de l'utilisateur.

(Inside of product)

4 Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pick-up) may break down due to potential difference caused by static electricity of clothes or human body.

So, be careful of electrostatic breakdown during repair of the traverse deck (optical pick-up).

4.1. Handling of traverse deck (optical pick-up)

1. Do not subject the optical pick-up to static electricity as it is extremely sensitive to electrical shock.
2. To protect the laser diode against electrostatic breakdown, be sure that the short land of the flexible board (FFC board) should be short-circuit by solder before pulling out the FFC. Then inserting a short pin or similar object into the tip of the flexible board.
   (Refer to Fig. 4-1.)
3. Take care not to apply excessive stress to the flexible board (FFC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted. (Refer to Fig. 4-1.)

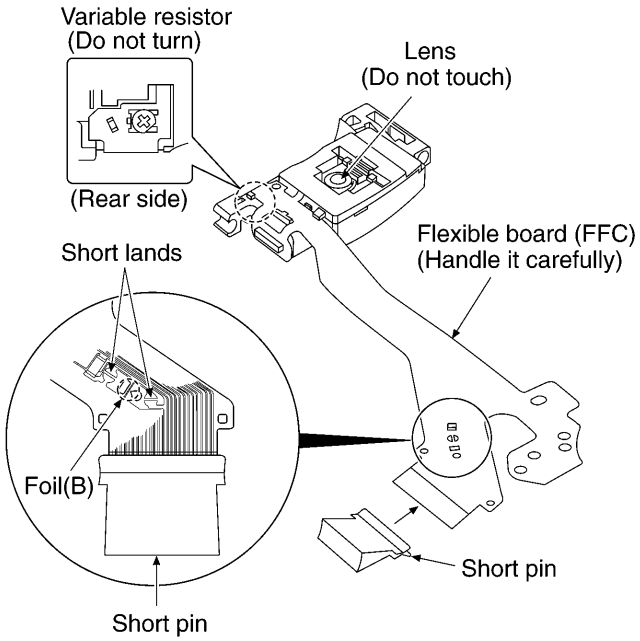


Fig. 4-1.

4.2. Caution when replacing traverse deck

The new traverse deck short-circuits by the short pin, the foil (B) and short lands to protect the laser diode against electrostatic breakdown. Be sure to replace to new one following procedures.

1. Remove the short pin from the FFC, and then connect it to the connector.
2. Cut the foil (B). (Refer to Fig. 4-1.) (Take care not to make contact with cutting point each other.)
3. Unsolder the short lands. (Refer to Fig. 4-1.)

4.3. Grounding for electrostatic breakdown prevention

4.3.1. Human body grounding

Use the anti-static wrist strap to discharge the static electricity from your body. (Refer to Fig. 4-2.)

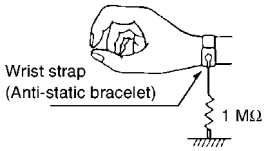


Fig. 4-2.

4.3.2. Work table grounding

Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pick-up) is placed, and ground the sheet. (Refer to Fig. 4-3.)

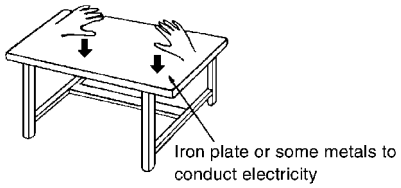


Fig. 4-3.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap.

So take care not to let your clothes touch the traverse deck (optical pick-up).

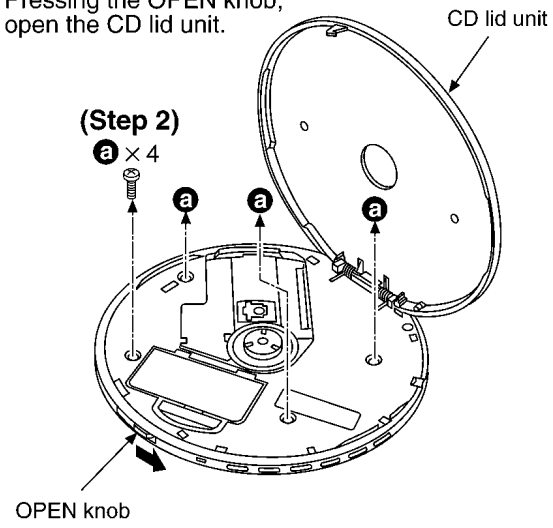
5 Operation Checks and Component Replacement Procedures

- **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
- **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**

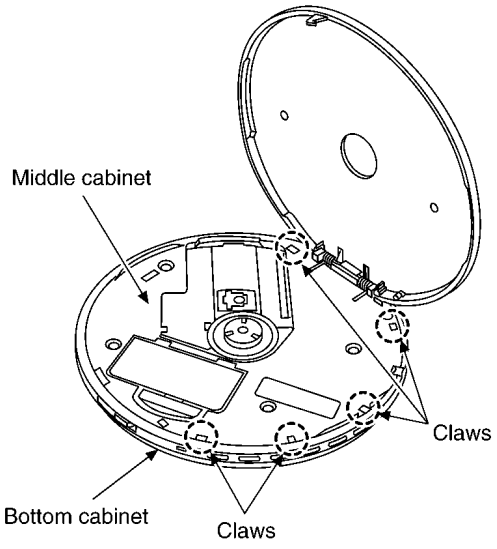
5.1. Checking for the P.C.B.

5.1.1. Checking for the P.C.B. (A side)

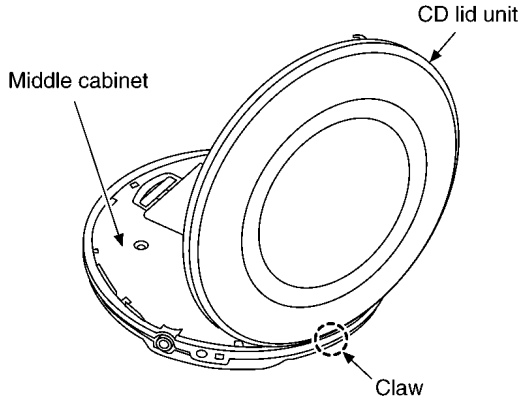
(Step 1)
Pressing the OPEN knob, open the CD lid unit.



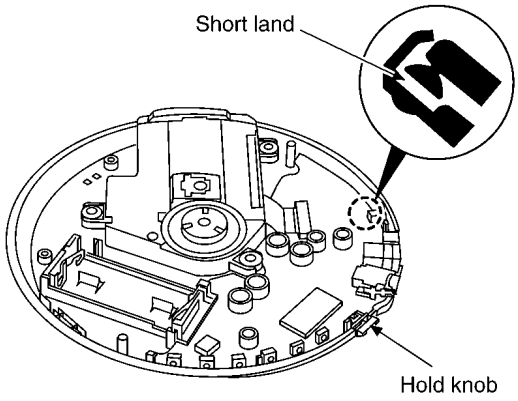
(Step 3)
Release the 5 claws, and then spread the clearance between the bottom cabinet and middle cabinet manually.



(Step 4)
Release the claw, and then remove the middle cabinet ass'y and CD lid unit.



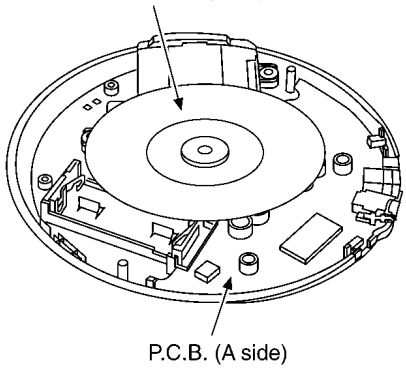
(Step 5)
Short-circuit the land by soldering.



NOTE:
Before checking, remove the hold knob so as not to come off.

- **Check the P.C.B. (A side) as shown below.**

(Step 6)
Put the disc (8cm).

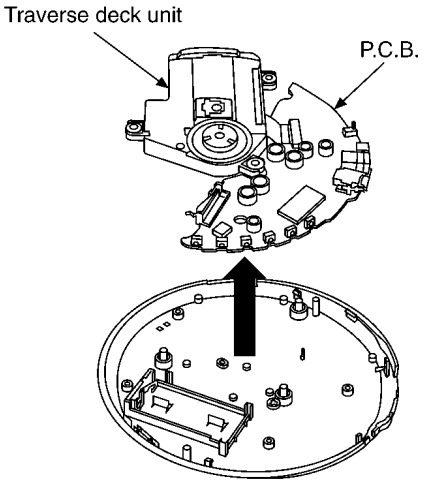


NOTE:
After checking, unsolder the short land to open circuit.

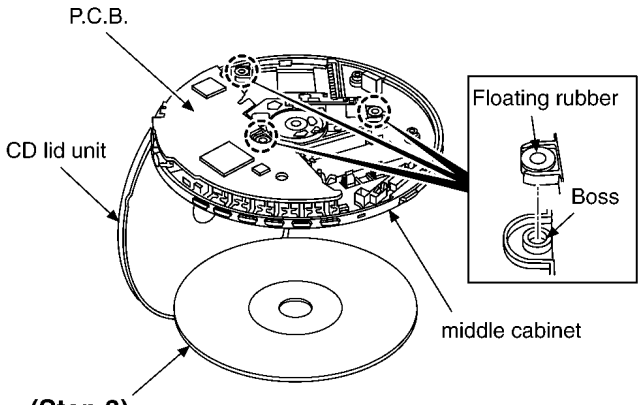
5.1.2. Checking for the P.C.B. (B side)

・Follow the **(Step 1)** - **(Step 5)** of item 5.1.1.

(Step 1)
Remove the traverse deck unit and P.C.B..

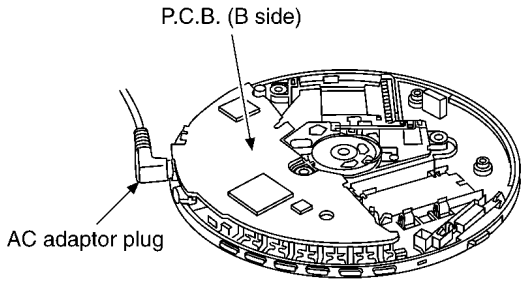


(Step 2)
Align the floating rubbers with bosses, and then locate the traverse deck unit and P.C.B. on the middle cabinet.



(Step 3)
Put the test disc, and then close the CD lid unit.

・**Check the P.C.B. (B side) as shown below.**

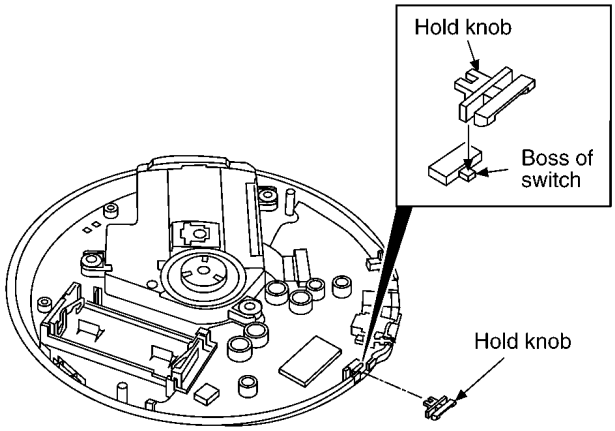


(Step 4)
Insert the AC adaptor plug into the DC IN jack, and then apply the power.

NOTE:
After checking, unsolder the short land to open circuit.

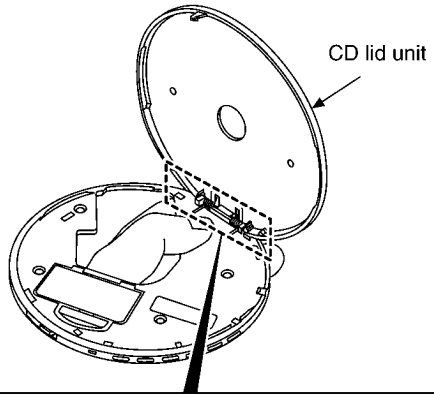
Notice for installation of hold knob

・Make sure the boss of switch is fit in the hold knob.

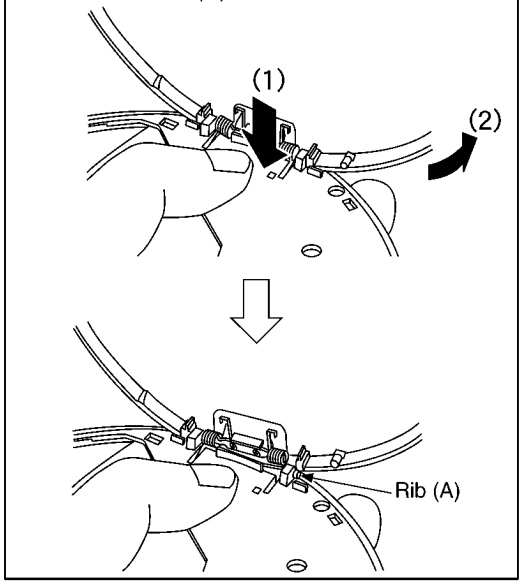


5.2. Replacement for the CD lid unit, open spring 1, open spring 2 and retainer plate

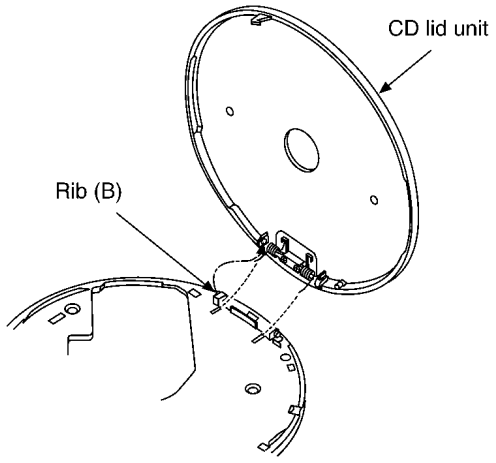
・Follow the **(Step 1)** - **(Step 4)** of item 5.1.1.

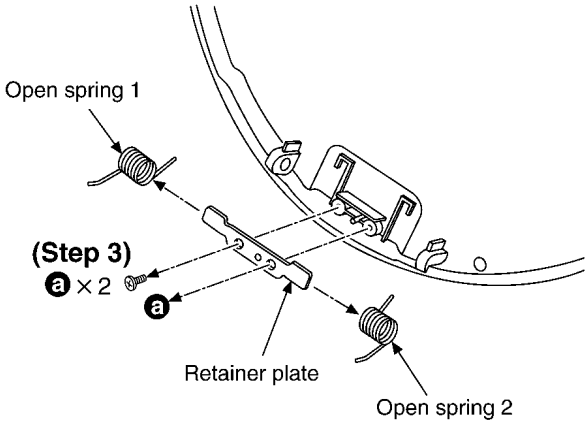


(Step 1)
Push the middle cabinet direction of arrow (1), and then remove the CD lid unit from rib (A).



(Step 2)
Remove the CD lid unit from rib (B).



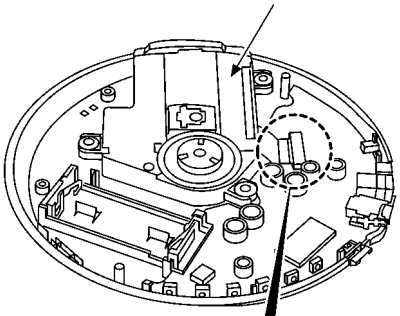


(Step 4)
Remove the open spring 1, open spring 2 and retainer plate.

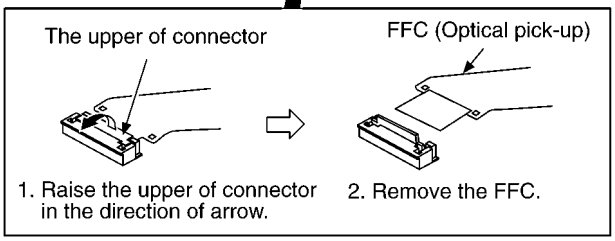
5.3. Replacement for the traverse motor

・Follow the **(Step 1)** - **(Step 4)** of item 5.1.1.

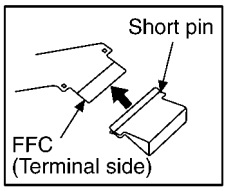
(Step 2)
Remove the traverse deck unit.



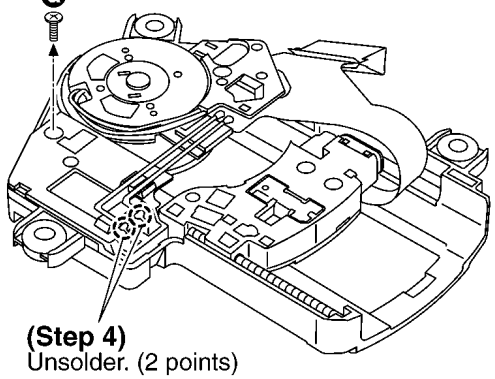
(Step 1)
Pull out the FFC from connector .



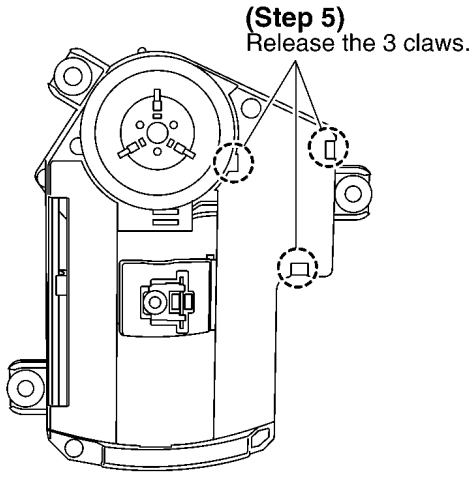
NOTE:
Insert a short pin into FFC(Terminal side) of the traverse deck.
(Refer to "**Handling Precautions for Traverse Deck**".)

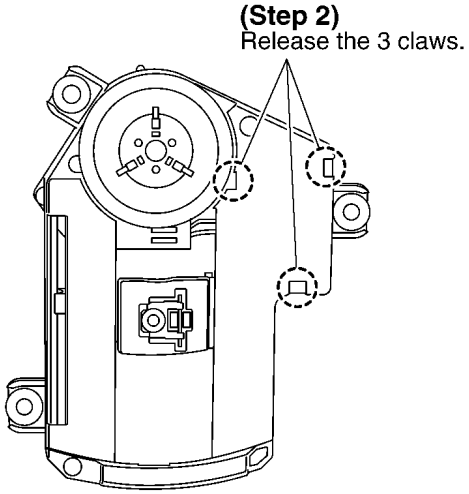


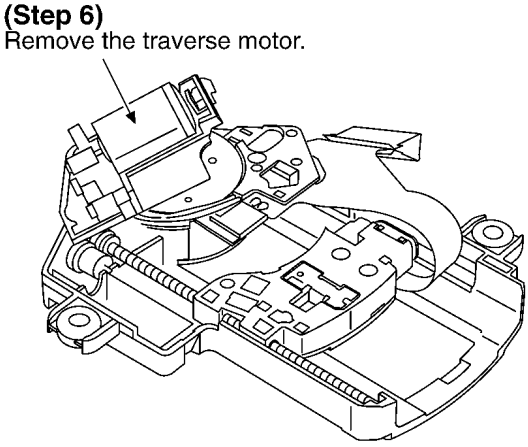
(Step 3)
ⓐ

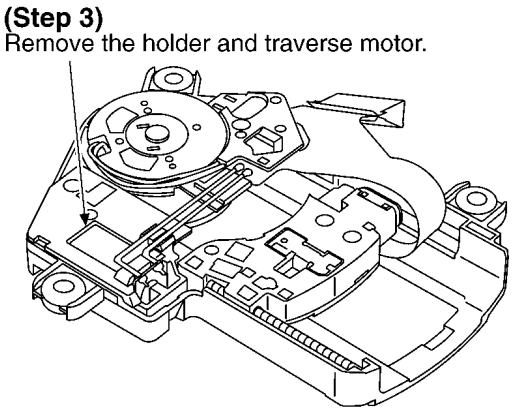


(Step 4)
Unsolder. (2 points)



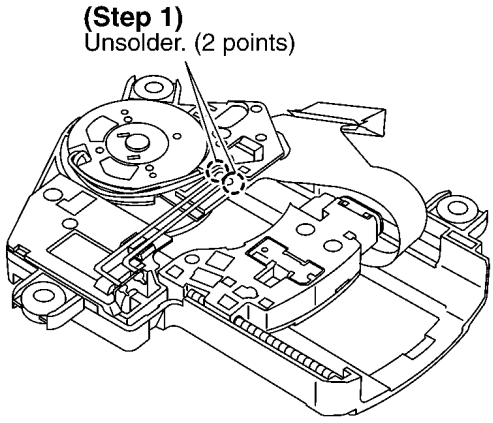


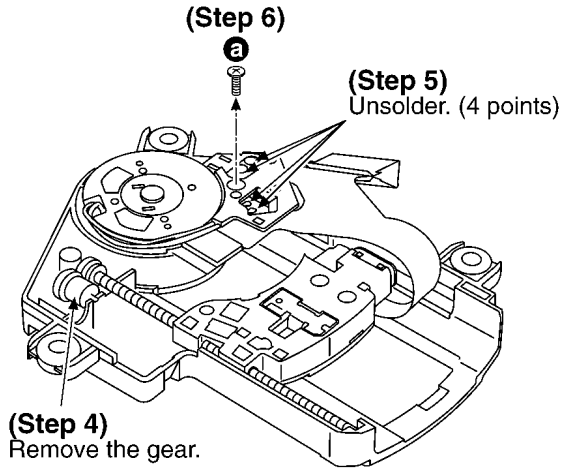




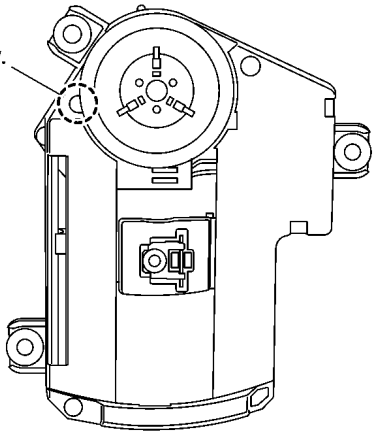
5.4. Replacement for the optical pick-up

- Follow the **(Step 1)** - **(Step 4)** of item 5.1.1.
- Follow the **(Step 1)** - **(Step 2)** of item 5.3.

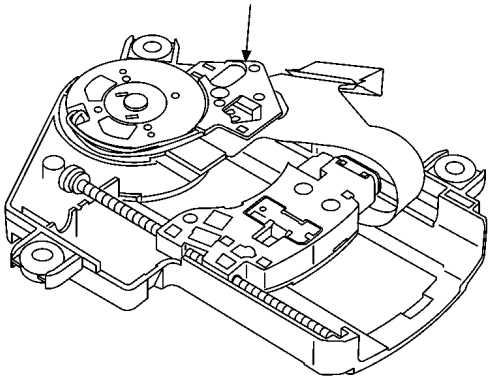




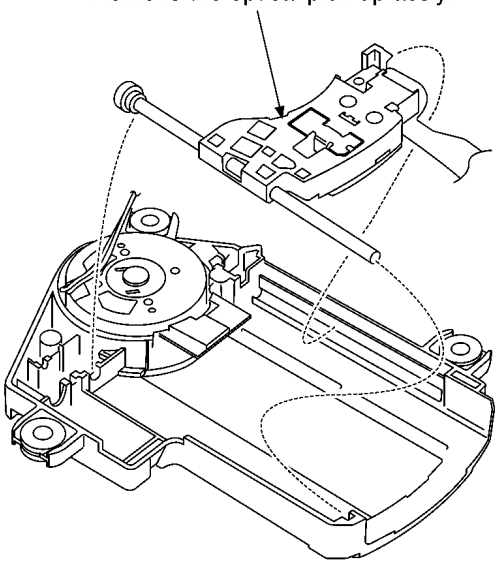
(Step 7)
Release the claw.



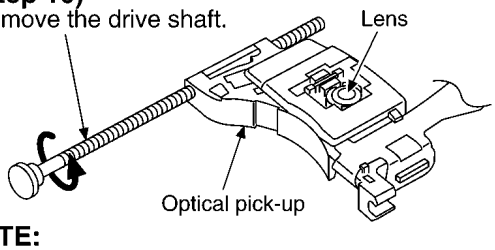
(Step 8)
Remove the FFC holder.



(Step 9)
Remove the optical pick-up ass'y.



(Step 10)
Remove the drive shaft.



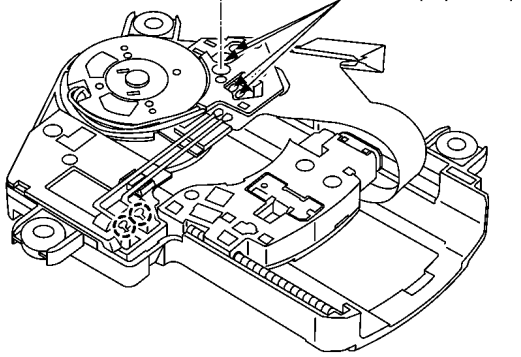
NOTE:
1. Use care to prevent damage the optical pick-up, due to the precision construction.
2. Do not apply the grease on the lens of optical pick-up.
3. Do not touch the lens of the optical pick-up.

5.5. Replacement for the rest switch

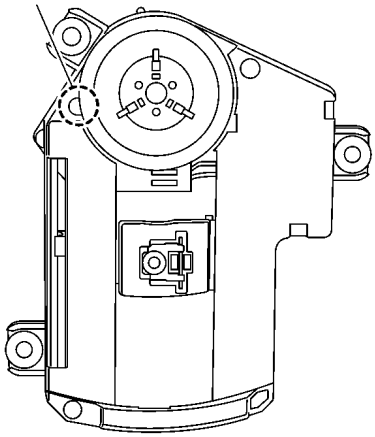
- Follow the **(Step 1)** - **(Step 4)** of item 5.1.1.
- Follow the **(Step 1)** , **(Step 2)** of item 5.4.

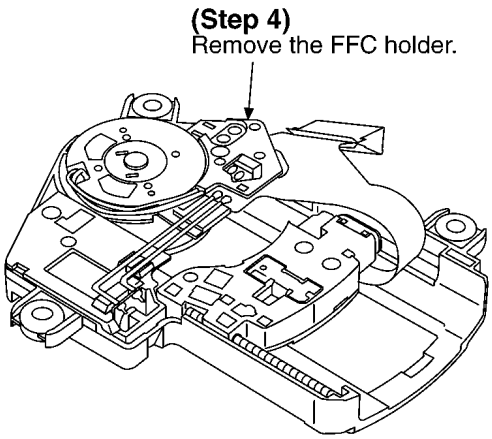
(Step 1)
ⓐ

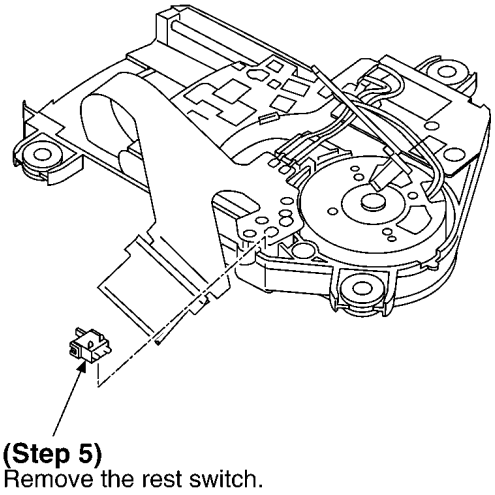
(Step 2)
Unsolder. (4 points)



(Step 3)
Release the claw.





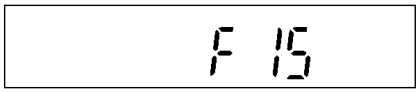


6 Display of Self-Diagnostic Function

This unit (SL-CT520) has self-diagnostic function. It may display below-mentioned on the remote control display.

- The substance of self-diagnostic display.

  Remote control display



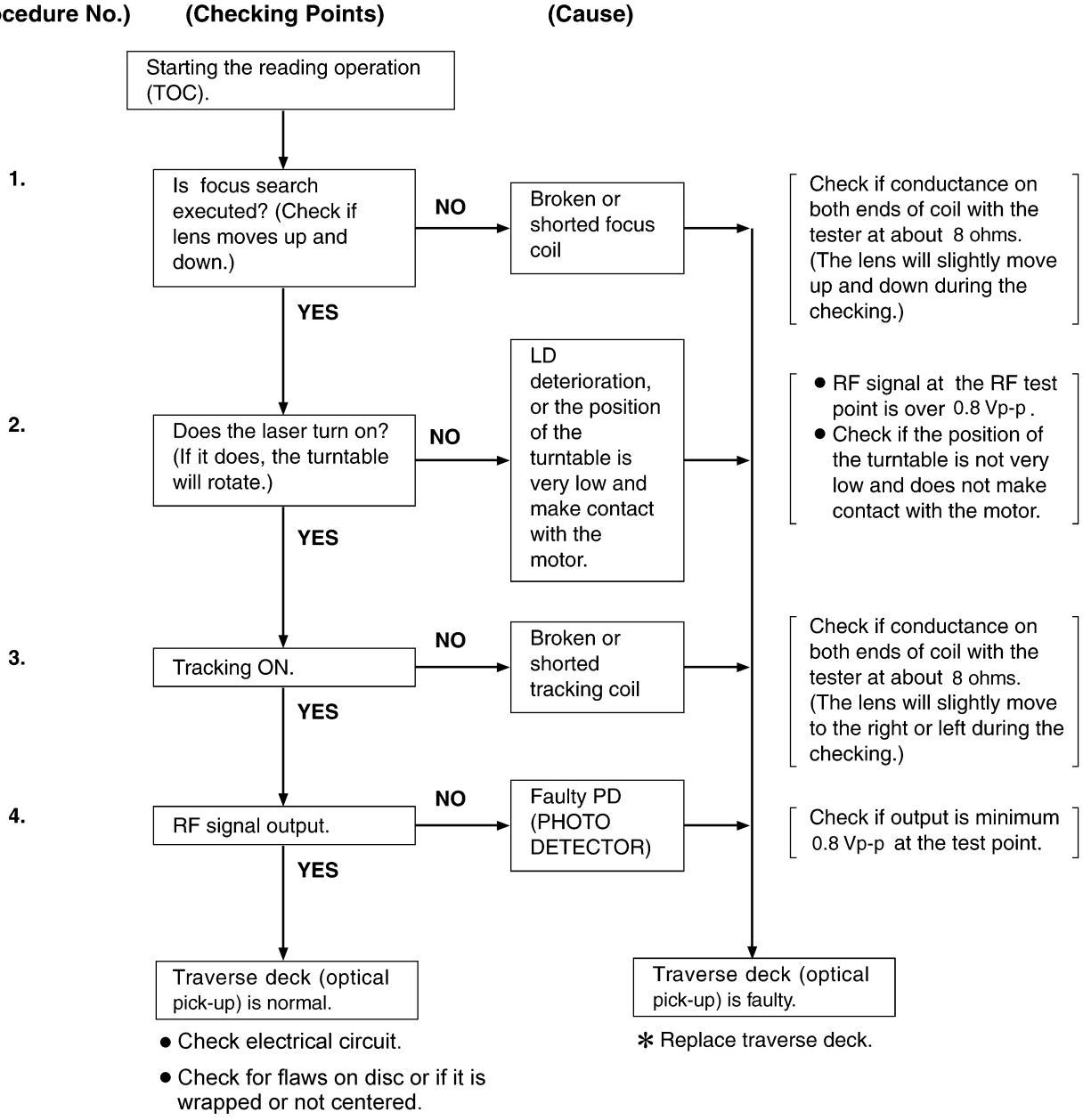
  (Press PLAY and STOP button. After 15 seconds, it is displayed for 2 seconds.)

In case of this display, it may be causing for abnormally movements of traverse deck, touching failure of REST detect switch and coming off or cutting off the flexible P.C.B.. It is necessary for confirmation or repair and replacement each parts.

7 Checking the Operation Problems on the Traverse Deck (Optical Pick-up)

Make sure to follow the procedures below to check the operation problems of the traverse deck (optical pick-up) before replacing it.

Replace the traverse deck only after the problem is identified.


(Procedure No.)
(Checking Points)
(Cause)
Starting the reading operation (TOC).
1.
Is focus search executed? (Check if lens moves up and down.)
NO
Broken or shorted focus coil
Check if conductance on both ends of coil with the tester at about 8 ohms. (The lens will slightly move up and down during the checking.)
YES
2.
Does the laser turn on? (If it does, the turntable will rotate.)
NO
LD deterioration, or the position of the turntable is very low and make contact with the motor.
● RF signal at the RF test point is over 0.8 Vp-p.
● Check if the position of the turntable is not very low and does not make contact with the motor.
YES
3.
Tracking ON.
NO
Broken or shorted tracking coil
Check if conductance on both ends of coil with the tester at about 8 ohms. (The lens will slightly move to the right or left during the checking.)
YES
4.
RF signal output.
NO
Faulty PD (PHOTO DETECTOR)
Check if output is minimum 0.8 Vp-p at the test point.
YES
Traverse deck (optical pick-up) is normal.
● Check electrical circuit.
● Check for flaws on disc or if it is wrapped or not centered.
Traverse deck (optical pick-up) is faulty.
✻ Replace traverse deck.

7.1. Check the operations described below on the traverse deck after replacing

7.1.1. Checking skip search

1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

7.1.2. Checking manual search

1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operation at either low or high speed (in both the forward and reverse directions).

7.1.3. Checking playability

1. Play the 0.7 mm black dot and the 0.7 mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

8 Automatic Adjustment Results Display Function (Self-Check Function)

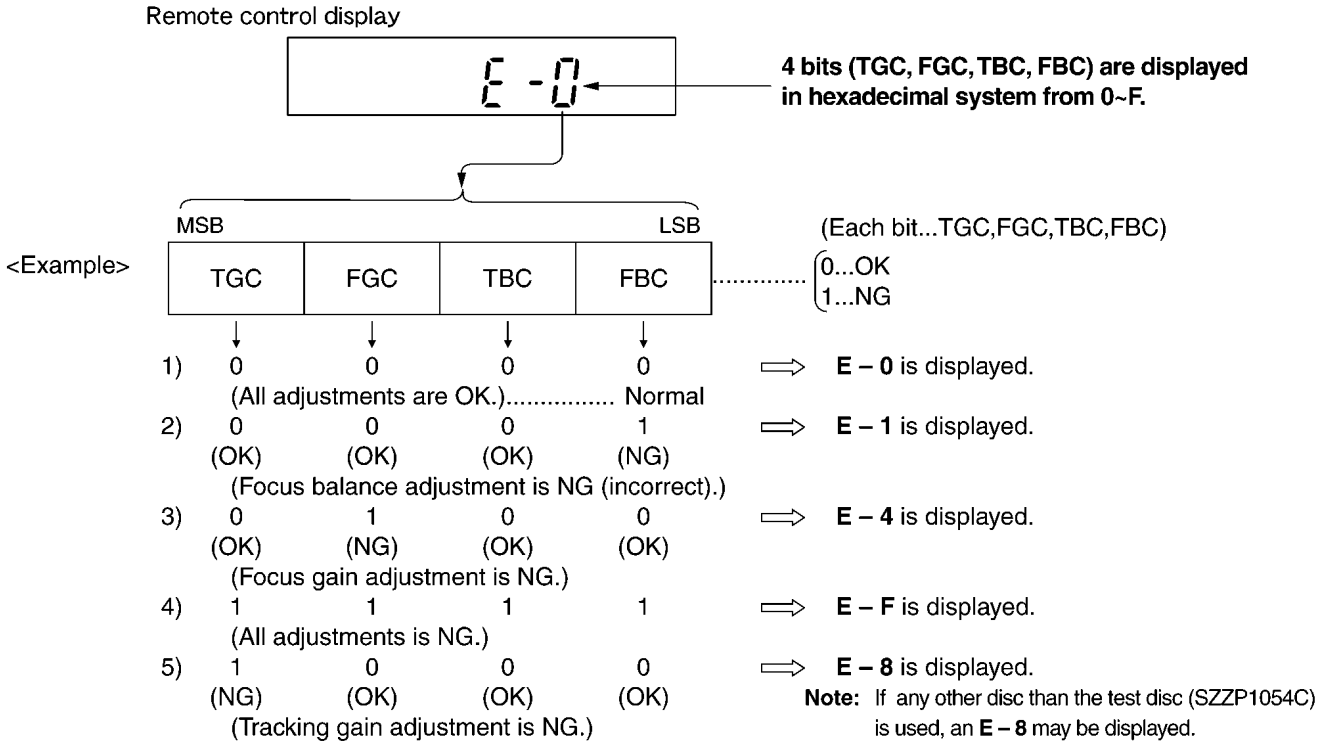
On the unit (SL-CT520), each automatic adjustment result are displayed on the remote control display. This function is convenient to check or identify which automatic adjustment circuit is incorrect.

The followings are the contents of the automatic adjustment result displays (Self-Check Function).

8.1. How to display automatic adjustment results

1. Load the test disc (SZZP1054C).
2. Press the ⏮ (SKIP/SEARCH) and ⏭ (SKIP/SEARCH) buttons simultaneously and hold them, and additionally press the ▶/⏸ (PLAY/PAUSE) button.
3. Press the ■ (STOP/TURN OFF) button once.
4. An automatic adjustment result is displayed on the remote control display.

8.2. Display of automatic adjustment results (Self-Check Function)


Remote control display
E -0
4 bits (TGC, FGC, TBC, FBC) are displayed in hexadecimal system from 0~F.
MSB
LSB
(Each bit...TGC,FGC,TBC,FBC)
<Example>
TGC
FGC
TBC
FBC
0...OK
1...NG
1) 0 0 0 0 ⇨ E – 0 is displayed.
(All adjustments are OK.)..... Normal
2) 0 0 0 1 ⇨ E – 1 is displayed.
(OK) (OK) (OK) (NG)
(Focus balance adjustment is NG (incorrect).)
3) 0 1 0 0 ⇨ E – 4 is displayed.
(OK) (NG) (OK) (OK)
(Focus gain adjustment is NG.)
4) 1 1 1 1 ⇨ E – F is displayed.
(All adjustments is NG.)
5) 1 0 0 0 ⇨ E – 8 is displayed.
(NG) (OK) (OK) (OK)
(Tracking gain adjustment is NG.)
Note: If any other disc than the test disc (SZZP1054C) is used, an E – 8 may be displayed.

<Example>

Follow the below steps when E-1 is displayed.

(Cause: Focus balance (FBC) is set beyond the limit.)

・Check if

1. the waveform or voltage of the focus servo circuit is correct, and
2. the optical pick-up returns to the normal state by exchanging the traverse deck.

Follow the below steps when E-4 is displayed.

(Cause: Focus gain (FGC) is set beyond the limit.)

・Check if

1. the waveform or voltage of the focus servo circuit is correct,
2. the focus coil of the optical pick-up is correct (around 8 ohms), and
3. the optical pick-up returns to the normal state by exchanging the traverse deck.

Follow the below steps when E-F is displayed.

(Cause: All adjustments (TGC, FGC, TBC, FBC) are set beyond the limit.)

・Check if

1. the optical pick-up returns to the normal state by exchanging the traverse deck, and
2. the waveform or voltage of the servo ICs are correct.

Note:

It is not always necessary to exchange the traverse deck when an error message is displayed.

Be sure to check if the circuit is defective or not before exchanging the traverse deck.

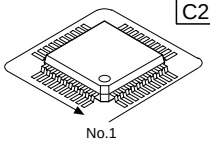
Note:

If any other disc than the test disc (SZZP1054C) is used, an error message may be displayed.

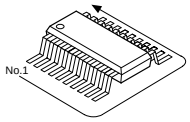
This is not a malfunction.

9 Type Illustration of ICs, Transistors and Diodes

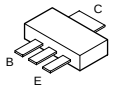
MN6627962JB	128PIN
C0DBFFB00005	48PIN
C2BBGF000595	80PIN



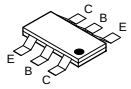
C3EBCG000096	8PIN
C3ABMG000207	50PIN



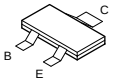
B1ABMD000004



B1GFGCAA0001

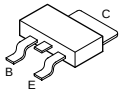


2SB709ATX
B1GBCFJG0004

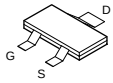


UN521LTX
UN5114TX
UN521MTX
UN5113TX
UN5215TX
UNR521000L

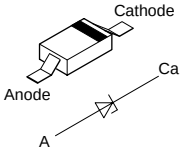
2SB1182TLPQR



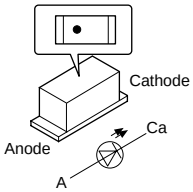
B1CFHA000002



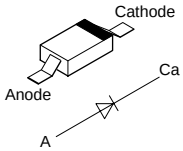
MA8056MTX
MA8120MTX



B3AAB0000037



MA111TX



10 Schematic Diagram Notes

- **This schematic diagram may be modified at any time with the development of new technology.**

Notes:

S201: Laser ON/OFF switch in ON position (It turns ON with disc holder closed.)
S202: Rest detector switch in OFF position (It turns ON when optical pick-up comes to innermost periphery.)
S310: Hold (HOLD) switch in OFF position
S801: Play/pause (▶/❚❚) switch
S802: Stop/turn off (■ ,TURN OFF) switch
S803: F.skip/search (▶▶❙) switch
S804: R.skip/search (❙◀◀) switch
S805: Volume control switch (VOL-)
S806: Volume control switch (VOL+)

- Important safety notice:

  Components identified by ⚠ mark have special characteristics important for safety.

  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

  When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

- The supply part number is described alone in the replacement parts list.

- Voltage and signal line

  : Positive voltage line

  : Playback signal line

- Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

  Measurement conditions:

  – AC adaptor is used for power supply.
  – Set the hold switch to ON.
  – The parenthesized is the voltage for test disc (1 kHz, L+R, 0 dB) in play mode, and the other, for no disc in stop mode.

Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

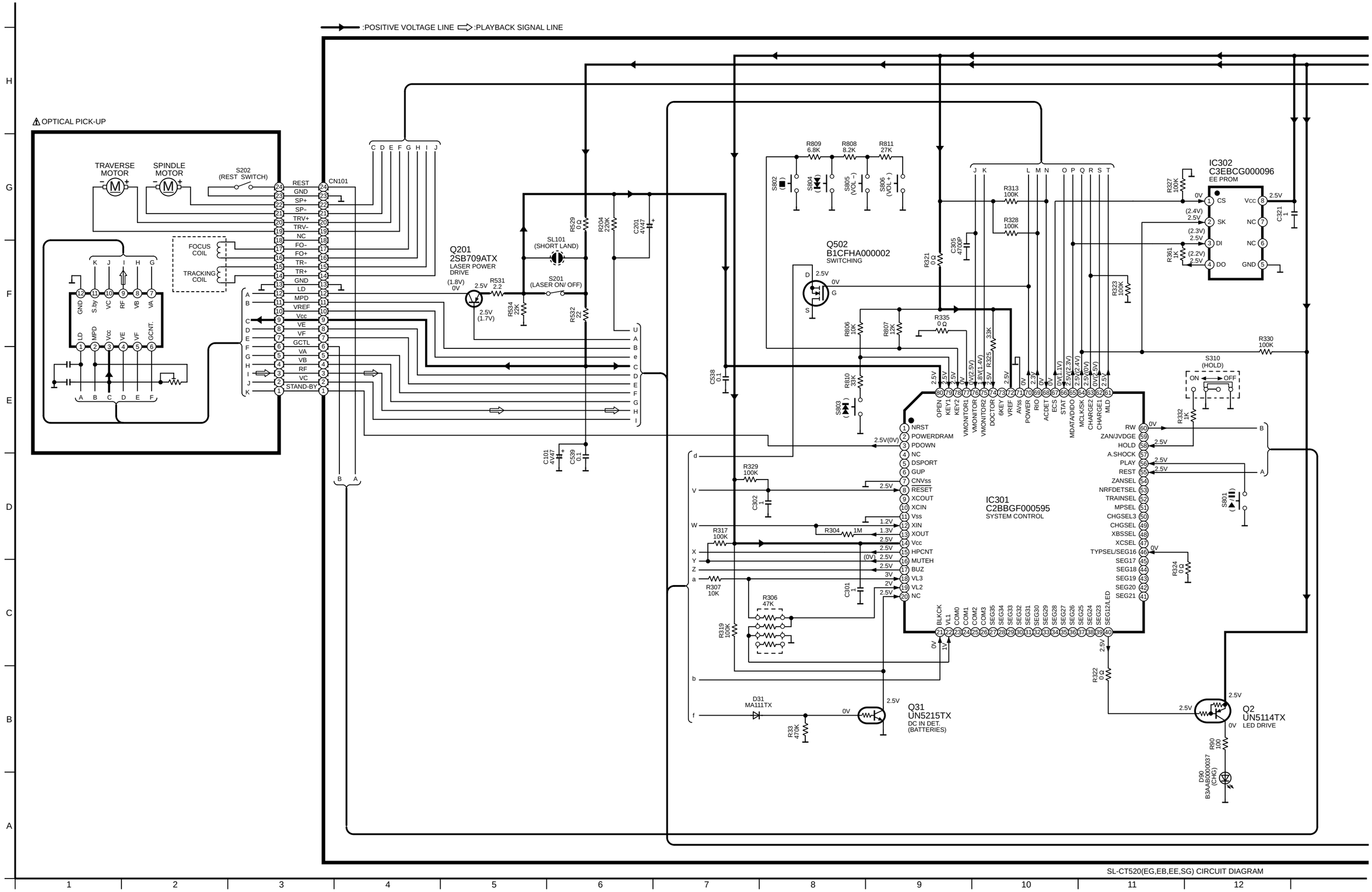
Cover the parts boxes made of plastics with aluminum foil.

Ground the soldering iron.

Put a conductive mat on the work table.

Do not touch the legs of IC or LSI with the fingers directly.

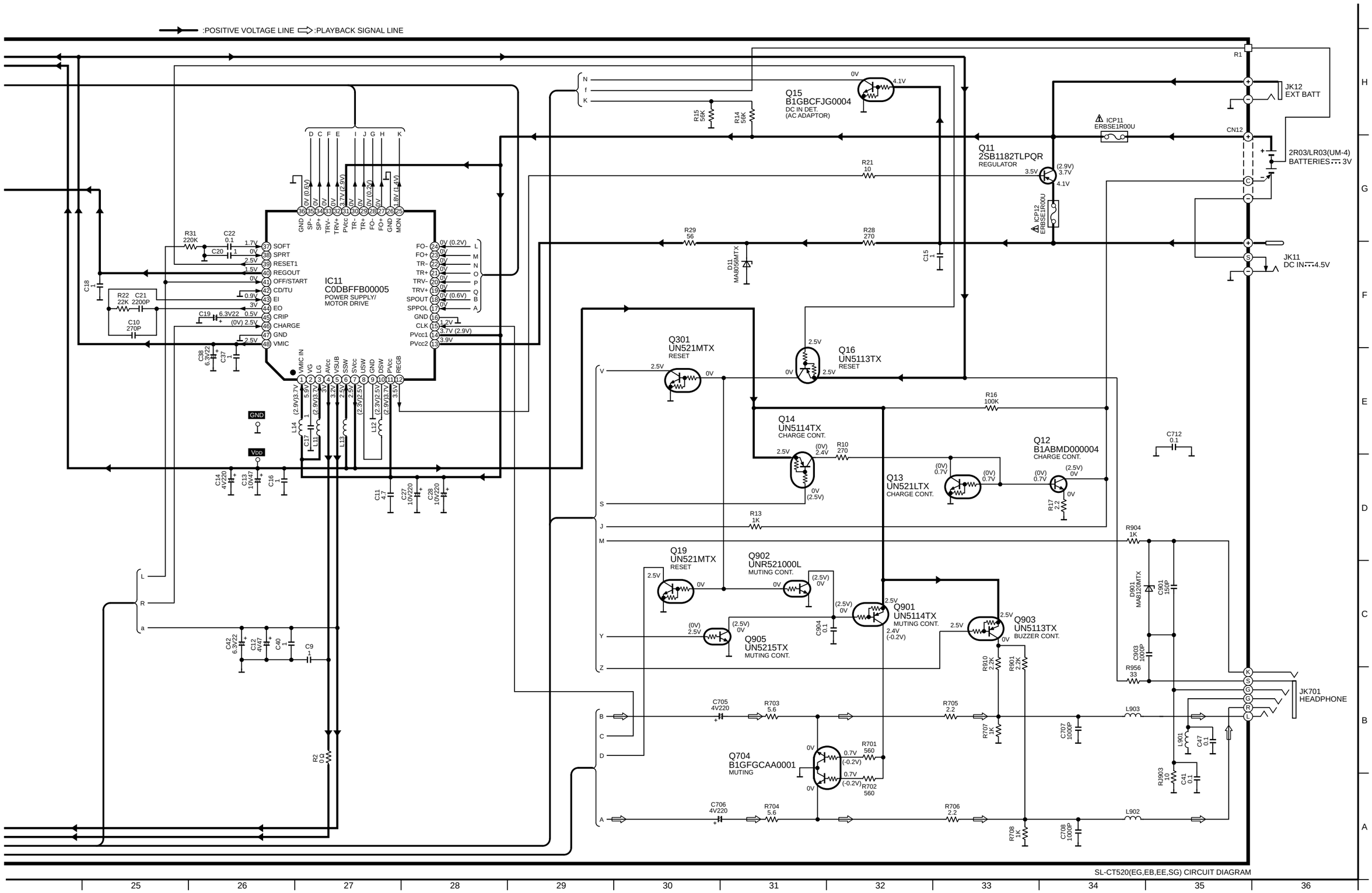
11 Schematic Diagram



:POSITIVE VOLTAGE LINE :PLAYBACK SIGNAL LINE

IC501
MN6627962JB
SERVO AMP/SERVO PROCESSOR/
DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER & D/A CONVERTER

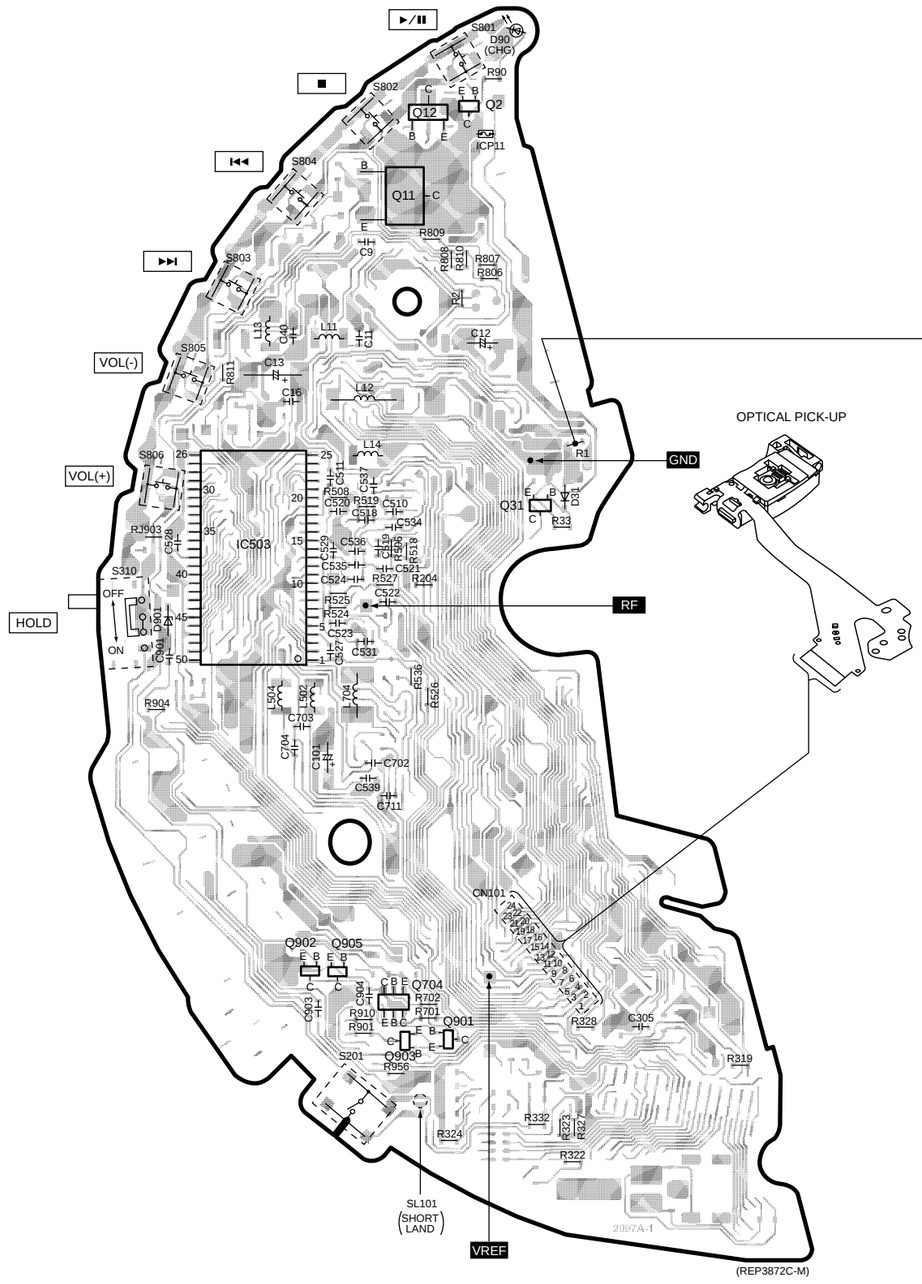
IC503
C3ABMG000207
DRAM


:POSITIVE VOLTAGE LINE :PLAYBACK SIGNAL LINE
IC11
C0DBFFB00005
POWER SUPPLY/
MOTOR DRIVE
Q15
B1GBCFJG0004
DC IN DET.
(AC ADAPTOR)
Q11
2SB1182TLPQR
REGULATOR
Q16
UN5113TX
RESET
Q301
UN521MTX
RESET
Q14
UN5114TX
CHARGE CONT.
Q12
B1ABMD000004
CHARGE CONT.
Q13
UN521LTX
CHARGE CONT.
Q19
UN521MTX
RESET
Q902
UNR521000L
MUTING CONT.
Q901
UN5114TX
MUTING CONT.
Q903
UN5113TX
BUZZER CONT.
Q905
UN5215TX
MUTING CONT.
Q704
B1GFGCAA0001
MUTING
JK12
EXT BATT
JK11
DC IN 4.5V
2R03/LR03(UM-4)
BATTERIES 3V
JK701
HEADPHONE
ICP11
ERBSE1R00U
ICP12
ERBSE1R00U
D11
MA8056MTX
D901
MA8120MTX
SL-CT520(EG,EB,EE,SG) CIRCUIT DIAGRAM

12 Printed Circuit Board and Wiring Connection Diagram

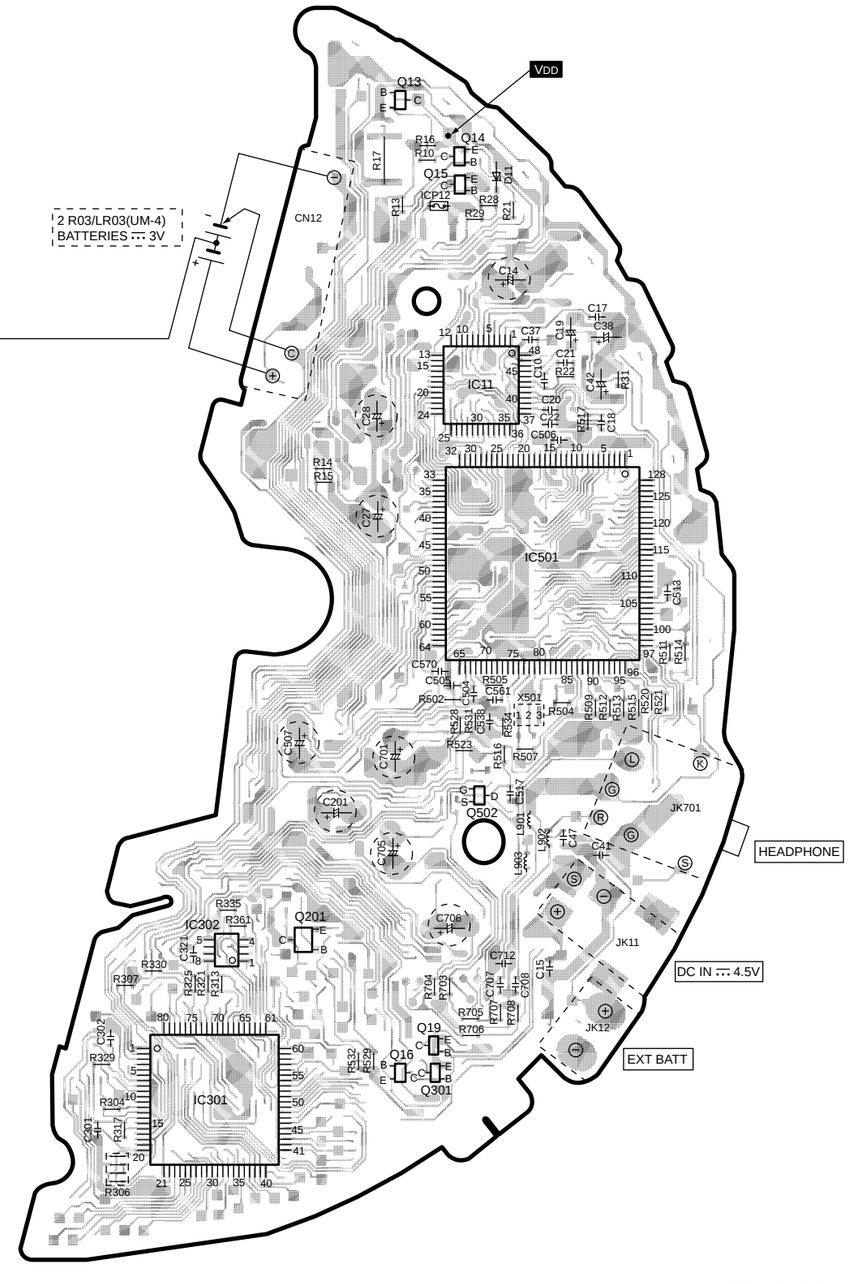
Note: This printed circuit board diagram may be modified at any time with the development of new technology.

(SIDE: A)



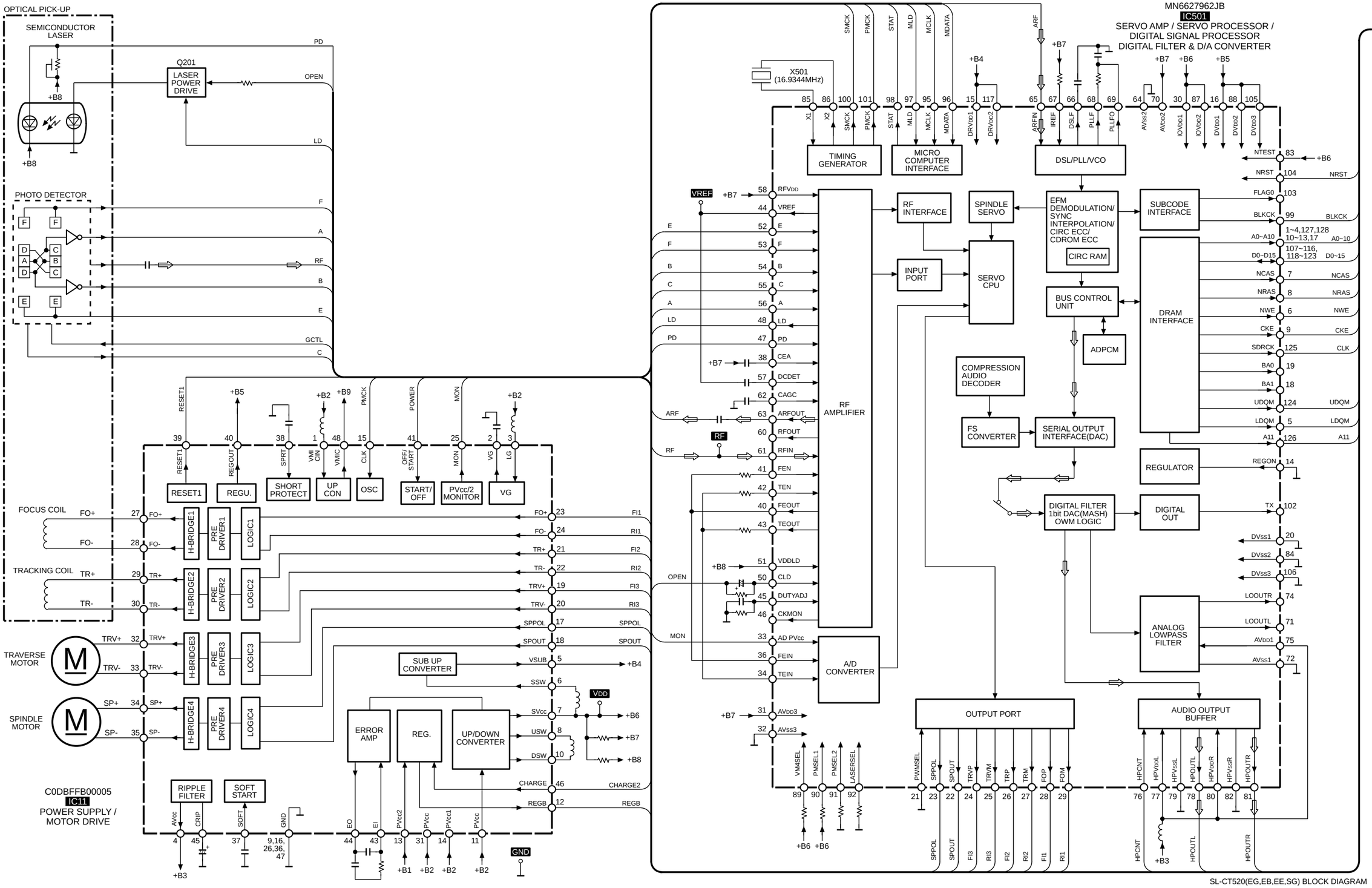
(REP3872C-M)

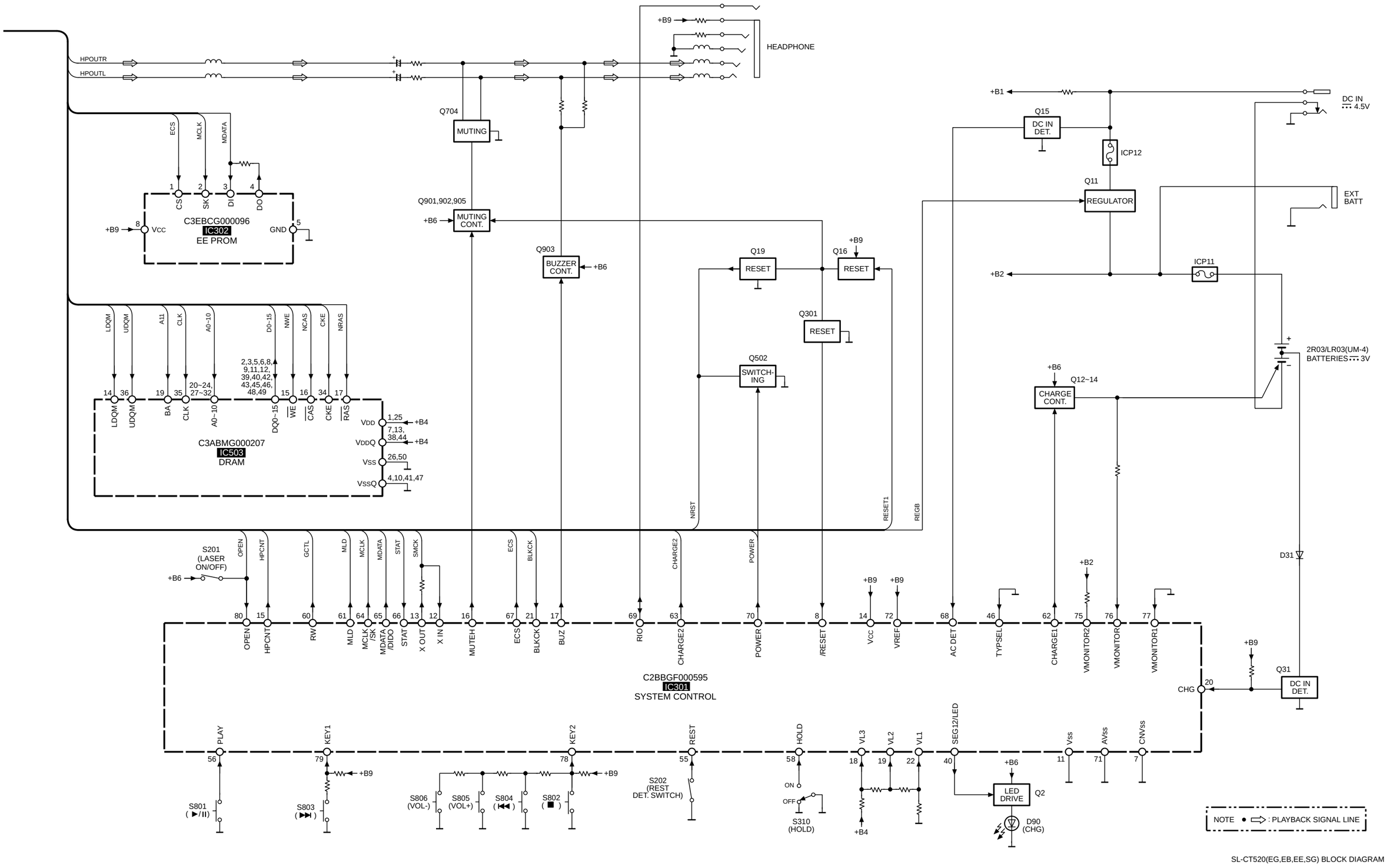
(SIDE: B)



SL-CT520(EG,EB,EE,SG) P.C.B.

13 Block Diagram





SL-CT520(EG,EB,EE,SG) BLOCK DIAGRAM

14 Terminal Function of ICs

14.1. IC301(C2BBGF000595): System Control

Pin No.	Terminal Name	I/O	Function
1	NRST	-	Not used, open
2	POWER DRAM	-	Not used, open
3	PDOWN	O	Hologram laser circuit power down output
4	NC	-	Not used, open
5	DSPORT	-	Not used, open
6	GUP	-	Not used, open
7	CNVSS	-	GND
8	RESET	I	Reset signal input
9	XCOUT	-	Not used, open
10	XCIN	-	Not used, open
11	VSS	-	GND
12	XIN	I	System clock input
13	XOUT	O	System clock output
14	VCC	I	Power supply terminal
15	HPCNT	O	Headphone output permit output
16	MUTEH	O	Headphone mute output
17	BUZ	O	Buzzer signal output
18	VL3	I	Power supply connected terminal
19	VL2	I	Power supply connected terminal
20	NC	I	DC IN detect signal input
21	BLKCK	I	Block clock signal input
22	VL1	I	Power supply connected terminal
23 | 26	COM0 | COM3	-	Not used, open
27 | 39	SEG35 | SEG23	-	Not used, open
40	SEG12/ LED	O	Charge ON LED output
41 | 45	SEG21 | SEG17	-	Not used, open
46	TYPESEL/ SEG16	I	Model select signal input
47	XCSEL	-	Not used, open
48	XBSSEL	-	Not used, open
49	CHGSEL	-	Not used, open
50	CHGSEL3	-	Not used, open
51	MPSEL	-	Not used, open
52	TRAINSEL	-	Not used, open
53	NRFDET SEL	-	Not used, open
54	ZANSEL	-	Not used, open
55	REST	I	Rest detect switch signal input
56	PLAY	I	Play key signal input
57	A.SHOCK	-	Not used, open
58	HOLD	I	Hold switch signal input
59	ZAN/ JVDGE	-	Not used, open
60	RW	O	CD-RW output
61	MLD	O	Serial command latch output
62	CHARGE1	O	Charge ON output
63	CHARGE2	O	PVCC1 voltage up output
64	MCLK/SK	O	Clock output for IC302/IC501
65	MDATA/ DIDO	O	Data output for IC501/Data input/output for IC302
66	STAT	I	Status signal input
67	ECS	O	Communication signal output for IC302
68	ACDET	I	AC detect signal input
69	RIO	O	Remote control communication signal output
70	POWER	O	Power ON signal output
71	AVSS	-	GND
72	VREF	I	Reference voltage input
73	6KEY	-	Not used, open
74	DOCTOR	I	Doctor mode AD input
75	VMONI TOR2	I	PVCC1 voltage measurement input
76	VMONI TOR	I	Battery voltage (GND) measurement input
77	VMONI TOR3	I	Connected to GND via resistor
78	KEY2	I	Operation key signal input
79	KEY1	I	Operation key signal input
80	OPEN	I	CD lid open switch input

14.2. IC501(MN6627962JB): Servo Amp, Servo Processor, Digital Signal Processor, Digital Filter & D/A Converter

Pin No.	Terminal Name	I/O	Function
1	A7	O	Address 7 signal output
2	A6	O	Address 6 signal output
3	A5	O	Address 5 signal output
4	A4	O	Address 4 signal output
5	LDQM	O	Lower bite data mask signal output
6	NWE	O	Write enable signal output
7	NCAS	O	CAS control signal output
8	NRAS	O	RAS control signal output
9	CKE	O	Clock enable signal output
10	A3	O	Address 3 signal output
11	A2	O	Address 2 signal output
12	A1	O	Address 1 signal output
13	A0	O	Address 0 signal output
14	REGON	I	Built in regulator control signal
15	DRVDD1	I	Power supply terminal
16	DVDD1	I	Power supply terminal
17	A10	O	Address 10 signal output
18	BA1	-	Not used, open
19	BA0	-	Not used, open
20	DVSS1	-	GND
21	PWMSEL	I	PWM output mode select input
22	SPOUT	O	Spindle drive signal output
23	SPPOL	O	Spindle drive signal output
24	TRVP	O	Traverse drive signal output (+)
25	TRVM	O	Traverse drive signal output (-)
26	TRP	O	Tracking drive signal output (+)
27	TRM	O	Tracking drive signal output (-)
28	FOP	O	Focus drive signal output (+)
29	FOM	O	Focus drive signal output (-)
30	IOVDD1	I	Power supply terminal
31	AVDD3	I	Power supply terminal
32	AVSS3	-	GND
33	ADPVCC	I	Power supply voltage monitor signal input
34	TEIN	I	DSP tracking error signal input
35	ATOFS	-	Not used, open
36	FEIN	I	DSP focus error signal input
37	AFOFS	-	Not used, open
38	CEA	I	HPE amp capacitor connect terminal
39	RFENV	O	RF envelope signal monitor

Pin No.	Terminal Name	I/O	Function
40	FEOUT	O	Focus error signal amp output
41	FEN	I	Focus error signal amp inverting input
42	TEN	I	Tracking error signal amp inverting input
43	TEOUT	O	Tracking error signal amp output
44	VREF	O	VREF output
45	DUTYADJ	I	Laser intermittent drive clock duty adj. resistor terminal
46	CKMON	-	Not used, open
47	PD	I	APC amp input
48	LD	O	Laser power drive signal output
49	VDDDRV	-	Not used, open
50	CLD	I	APC loop filter connected terminal
51	VDDLD	I	Power supply terminal
52	E	I	Tracking signal input 1
53	F	I	Tracking signal input 2
54	B	I	Focus signal input 2/RF addition amp input 2
55	C	I	RF addition amp input 3
56	A	I	Focus signal input 1/RF addition amp input 1
57	DCDET	I	HPF capacitor connected terminal
58	RFVDD	I	Power supply terminal
59	RFN	-	Not used, open
60	RFOUT	-	Not used, open
61	RFIN	I	AGC input
62	CAGC	I	AGC loop filter capacitor connected terminal
63	ARFOUT	O	AGC output
64	AVSS2	-	GND
65	ARFIN	I	RF signal input
66	DSLF	O	Loop filter for DSL
67	IREF	I	Reference current input
68	PLLF	O	Loop filter for PLL
69	PLLFO	O	Loop filter for PLL
70	AVDD2	I	Power supply terminal
71	LOOUTL	-	Not used, open
72	AVSS1	-	GND
73	NC	-	Not used, open
74	LOOUTR	-	Not used, open
75	AVDD1	I	Power supply terminal
76	HPCNT	I	Headphone control signal input
77	HPVDDL	I	Power supply terminal
78	HPOUTL	O	L ch audio output for headphone
79	HPVSSL	-	GND
80	HPVDDR	I	Power supply terminal
81	HPOUTR	O	R ch audio output for headphone
82	HPVSSR	-	GND
83	NTEST	I	Test mode input
84	DVSS2	-	GND
85	X1	I	Crystal oscillator connected terminal (F=16.9 MHz)
86	X2	O	
87	IOVDD2	I	Power supply terminal
88	DVDD2	I	Power supply terminal
89	VM4SEL/ OFF	-	Connected to DVDD2 via resistor
90	PMSEL1/ FBAL	-	Connected to DVDD2 via resistor
91	PMSEL2/ TBAL	-	Connected to GND via resistor
92	LASER SEL/BDO	-	Connected to GND via resistor
93	CLVS/ RFDET	-	Not used, open
94	IPFLAG2/ VDET	-	Not used, open
95	MCLK	I	Command clock signal input
96	MDATA	I	Command data input
97	MLD	I	Command load input
98	STAT	O	Status signal output

Pin No.	Terminal Name	I/O	Function
99	BLKCK	O	Sub code block clock signal output
100	SMCK	O	System clock signal output
101	PMCK	O	Power supply clock output
102	TX	-	Not used, open
103	FLAG0	-	Not used, open
104	NRST	I	Reset signal input
105	DVDD3	I	Power supply terminal
106	DVSS3	-	GND
107	D2	I/O	Data signal input/output 2
108	D1	I/O	Data signal input/output 1
109	D0	I/O	Data signal input/output 0
110	D3	I/O	Data signal input/output 3
111	D4	I/O	Data signal input/output 4
112	D5	I/O	Data signal input/output 5
113	D6	I/O	Data signal input/output 6
114	D7	I/O	Data signal input/output 7
115	D15	I/O	Data signal input/output 15
116	D14	I/O	Data signal input/output 14
117	DRVDD2	I	Power supply terminal
118	D13	I/O	Data signal input/output 13
119	D12	I/O	Data signal input/output 12
120	D11	I/O	Data signal input/output 11
121	D10	I/O	Data signal input/output 10
122	D9	I/O	Data signal input/output 9
123	D8	I/O	Data signal input/output 8
124	UDQM	O	Higher bite data mask signal output
125	SDRCK	O	Clock signal output
126	A11	O	Address 11 signal output
127	A9	O	Address 9 signal output
128	A8	O	Address 8 signal output

15 Supply of Rechargeable Battery as Replacement Parts

Please take note of the following points relating to Carrying Case to be used for protection of Rechargeable Battery from shorting.

Replacement Parts:

- Rechargeable Battery (RFKHHR4AGE <SL-CT520EE> / RFKHHR4AGTB <SL-CT520SG>) to be supplied will be provided with Carrying Case.
- No replacement parts will be supplied for Rechargeable Battery without Carrying Case.
- Replacement parts will be supplied for Carrying Case (RXQ0449) without Rechargeable Battery.
- To your customers, delivery Rechargeable Battery together with Carrying Case to prevent shorting accidents that may occur when Rechargeable Battery is carried about without Carrying Case.

16 Caution in use of Rechargeable Battery

- Take Rechargeable Battery out of Carrying Case and use it.
- Be sure to carry Rechargeable Battery in this Carrying Case.
  If not, may either heat or ignite by shorting with a metal.

17 Replacement Parts List

Notes:

- Important safety notice:

  Components identified by ⚠ mark have special characteristics important for safety.

  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

  When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.

- The parenthesized indications in Remarks columns specify the areas and colours.

  (EBA): SL-CT520EB, Blue Type

  (EBS): SL-CT520EB, Silver Type

  (EGA): SL-CT520EG, Blue Type

  (EGS): SL-CT520EG, Silver Type

  (EEA): SL-CT520EE, Blue Type

  (EES): SL-CT520EE, Silver Type

  (SGA): SL-CT520SG, Blue Type

  (SGS): SL-CT520SG, Silver Type

  (SGP): SL-CT520EG, Pink Type

  (SGY): SL-CT520EG, Yellow Type

- The marking [RTL] indicates that retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

- All parts are supplied by SPC.

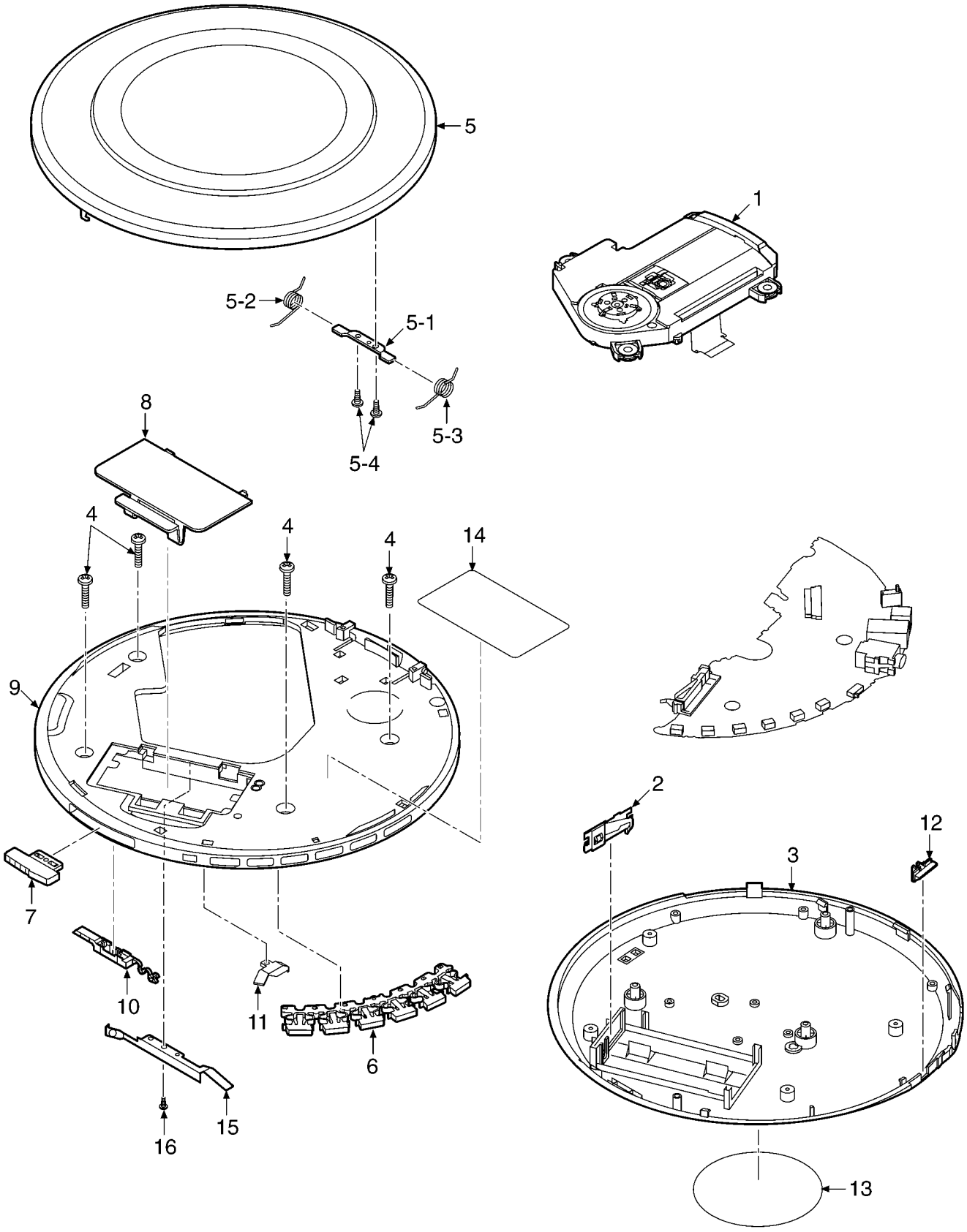
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RAE0241Z-M	TRAVERSE DECK UNIT	1	⚠
1-1	RMG0605-K1	FLOATING RUBBER	3	
1-2	RAF0241A	OPTICAL PICK-UP	1	⚠
1-3	RDG0554	GEAR 1	1	
1-4	RDG0555	GEAR 2	1	
1-5	RMQ1125-1	MOTOR HOLDER	1	
1-6	RMS0782	DRIVE SHAFT	1	
1-7	XQN17+BG45FJ	SCREW	1	
1-8	RXQ0971-3	TRAVERSE MOTOR ASS´Y	1	
2	RJC94019	BATTERY TERMINAL	1	
3	RKS0405-1H	BOTTOM CABINET	1	
4	XTN17+6GFJK	SCREW	4	
5	RYF0741A-S	CD LID UNIT	1	(EGS)(EBS) (EES)(SGS)
5	RYF0741A-A	CD LID UNIT	1	(EGA)(EBA) (EEA)(SGA)
5	RYF0741A-P	CD LID UNIT	1	(SGP)
5	RYF0741A-Y	CD LID UNIT	1	(SGY)
5-1	RMA1870	RETAINER PLATE	1	
5-2	RMB0804	OPEN SPRING 1	1	
5-3	RMB0805	OPEN SPRING 2	1	
5-4	XQN14+BG3FC	SCREW	1	
6	RGU2336-W	BUTTON,PLAY/PAUSE ETC	1	
7	RGV0341-W	KNOB,	1	
8	RKK0179-W	BATTERY COVER	1	
9	RKM0521-W	MIDDLE CABINET	1	
10	RMR1670-K	LOCK PLATE	1	
11	RMR1671-W	LENS	1	
12	RGV0340-S	KNOB,HOLD	1	
13	RGN2806-H	NAME PLATE	1	⚠ (EGS)(EGA) (EBS)(EBA)
13	RGN2826-H	NAME PLATE	1	⚠ (EES)(EEA)
13	RGN2805-H	NAME PLATE	1	⚠ (SGS)(SGA) (SGP)(SGY)
14	RQLS0244-1	CAUTION LABEL	1	
15	RMC0611	DETECT SPRING	1	
16	XQN14+BG3FC	SCREW	1	
A1	RFKHHR4AGE	RECHARGEABLE BATT. ASS´Y	2	(EES)(EEA)
A1	RFKHHR4AGTB	RECHARGEABLE BATT. ASS´Y	1	(SGS)(SGA) (SGP)(SGY)
A1-1	RFE0059	SPACER	1	
A1-2	RXQ0449	BATTERY CARRYING CASE	1	
A2	L0BAB0000183	STEREO EARPHONES	1	(EGS)(EGA) (EBS)(EBA) (EES)(EEA)
A2	L0BAB0000190	STEREO EARPHONES	1	(SGS)(SGA) (SGP)(SGY)
A3	N2QCBD000049	WIRED REMOTE CONTROL	1	(EGS)(EGA) (EBS)(EBA) (EES)(EEA)
A3	N2QCBD000048	WIRED REMOTE CONTROL	1	(SGS)(SGA) (SGP)(SGY)
A4	RFA2666-H	EXTERNAL BATTERY CASE	1	
A5	RFEA431E-S	AC ADAPTOR	1	⚠ (EGS)(EGA) (EES)(EEA)
A5	RFEA435B-S	AC ADAPTOR	1	⚠ (EBA)(EBS)
A5	RFEA444Z-S	AC ADAPTOR	1	⚠ (SGS)(SGA) (SGP)(SGY)
A6	RQT7816-B	OPERATING INSTRUCTIONS	1	(EGS)(EGA) (EBS)(EBA) (SGS)(SGA) (SGP)(SGY) ENGLISH
A6	RQT7815-E	OPERATING INSTRUCTIONS	1	(EGS)(EGA) FRENCH, GERMANY, ITALIAN, NETHERLANDS, DANISH, SPANISH, SWEDISH, PORTUGUESE, CZECH, POLISH
A6	RQT8055-R	OPERATING INSTRUCTIONS	1	(EES)(EEA) RUSSIAN, UKRAINE
A6	RQT7817-K	OPERATING INSTRUCTIONS	1	(SGS)(SGA) (SGP)(SGY) CHINESE
A6	RQT7819-Z	OPERATING INSTRUCTIONS	1	(SGS)(SGA) (SGP)(SGY) KOREAN
A7	K2DA42E00001	POWER PLUG ADAPTOR	1	⚠ (SGS)(SGA) (SGP)(SGY)
C9	ECJ1VB0J105K	6.3V 1U	1	
C10	F1H1H271A736	50V 270P	1	
C11	F1H0J4750003	6.3V 4.7U	1	
C12	F2H0G470A001	4V 47U	1	
C13	F3H1A476A001	10V 47U	1	
C14	ECEA0GKS221	4V 220U	1	
C15	ECJ1VF1A105Z	10V 1U	1	F1H1A105A030
C16	ECJ1VB1A105K	10V 1U	1	
C17	ECJ1VF1A105Z	10V 1U	1	F1H1A105A030
C18	ECJ1VB1A105K	10V 1U	1	
C19	F3F0J226A004	6.3V 22U	1	
C20	ECJ1VB1A105K	10V 1U	1	
C21	ECJ1VB1H222K	50V 2200P	1	F1H1H222A219

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C22	ECJ1VF1C104Z	16V 0.1U	1	
C27	ECEA1AKS221	10V 220U	1	
C28	ECEA1AKS221	10V 220U	1	
C37	ECJ1VB1A105K	10V 1U	1	
C38	F3F0J226A004	6.3V 22U	1	
C40	ECJ1VB1A105K	10V 1U	1	
C41	ECJ1VF1C104Z	16V 0.1U	1	
C42	F3F0J226A004	6.3V 22U	1	
C47	ECJ1VF1C104Z	16V 0.1U	1	
C101	F2H0G470A001	4V 47P	1	
C201	ECEA0GKS470	4V 47U	1	
C301	ECJ1VF1A105Z	10V 1U	1	F1H1A105A030
C302	ECJ1VB1A105K	10V 1U	1	
C305	ECJ1VB1H472K	50V 4700P	1	
C321	ECJ1VF1A105Z	10V 1U	1	F1H1A105A030
C504	ECJ1XB1C104K	16V 0.1U	1	
C505	ECJ1VB1E223K	25V 0.022U	1	
C506	ECJ1VF1A105Z	10V 1U	1	F1H1A105A030
C507	ECEA0JKS331	6.3V 330U	1	
C510	ECJ1XB1C393K	16V 0.039U	1	ECJ1VB1C393K
C511	ECJ1VF1C104Z	16V 0.1U	1	
C513	ECJ1VF1C104Z	16V 0.1U	1	
C517	ECJ1VB1A105K	10V 1U	1	
C518	ECJ1VB1H561K	50V 560P	1	
C519	ECJ1VB1H561K	50V 560P	1	
C520	ECJ1VB1A105K	10V 1U	1	
C521	ECJ1VB1H332K	50V 3300P	1	ECUX1H332KBV
C522	ECJ1XB1C104K	16V 0.1U	1	
C523	ECJ1VB1A105K	10V 1U	1	
C524	ECJ1VB1A105K	10V 1U	1	
C527	ECJ1VF1C104Z	16V 0.1U	1	
C528	ECJ1VF1C104Z	16V 0.1U	1	
C529	ECJ1VF1C104Z	16V 0.1U	1	
C531	ECJ1VC1H391J	50V 390P	1	
C534	ECJ1XB1C473K	16V 0.047U	1	
C535	ECJ1VF1C104Z	16V 0.1U	1	
C536	ECJ1VF1A105Z	10V 1U	1	F1H1A105A030
C537	ECJ1XB1C104K	16V 0.1U	1	
C538	ECJ1XB1C104K	16V 0.1U	1	
C539	ECJ1XB1C104K	16V 0.1U	1	
C561	ECJ1XB1C104K	16V 0.1U	1	
C570	ECJ1VB1A105K	10V 1U	1	
C701	ECEA0GKS471	4V 470U	1	
C702	ECJ1VB1A105K	10V 1U	1	
C703	ECJ1XB1C104K	16V 0.1U	1	
C704	ECJ1XB1C104K	16V 0.1U	1	
C705	ECEA0GKS221	4V 220U	1	
C706	ECEA0GKS221	4V 220U	1	
C707	ECJ1VB1H102K	50V 1000P	1	
C708	ECJ1VB1H102K	50V 1000P	1	
C711	ECJ1VF1C104Z	16V 0.1U	1	
C712	ECJ1VF1C104Z	16V 0.1U	1	
C901	ECJ1XC1H151J	50V 150P	1	F1H1H151A736
C903	ECJ1VB1H102K	50V 1000P	1	
C904	ECJ1VF1C104Z	16V 0.1U	1	
CN12	K4BC03A00007	BATTERY TERMINAL	1	
CN101	K1MN24B00108	CONNECTOR(24P)	1	
D11	MAZ80560ML	DIODE	1	
D31	MA2J11100L	DIODE	1	
D90	B3AAB0000037	LED	1	
D901	MA8120M	DIODE	1	MAZ81200M
IC11	C0DBFFB00005	IC	1	
IC301	C2BBGF000595	IC	1	
IC302	C3EBCG000096	IC	1	
IC501	MN6627962JB	IC	1	
IC503	C3ABMG000207	IC	1	
ICP11	ERBSE1R00U	IC PROTECTOR	1	⚠
ICP12	ERBSE1R00U	IC PROTECTOR	1	⚠

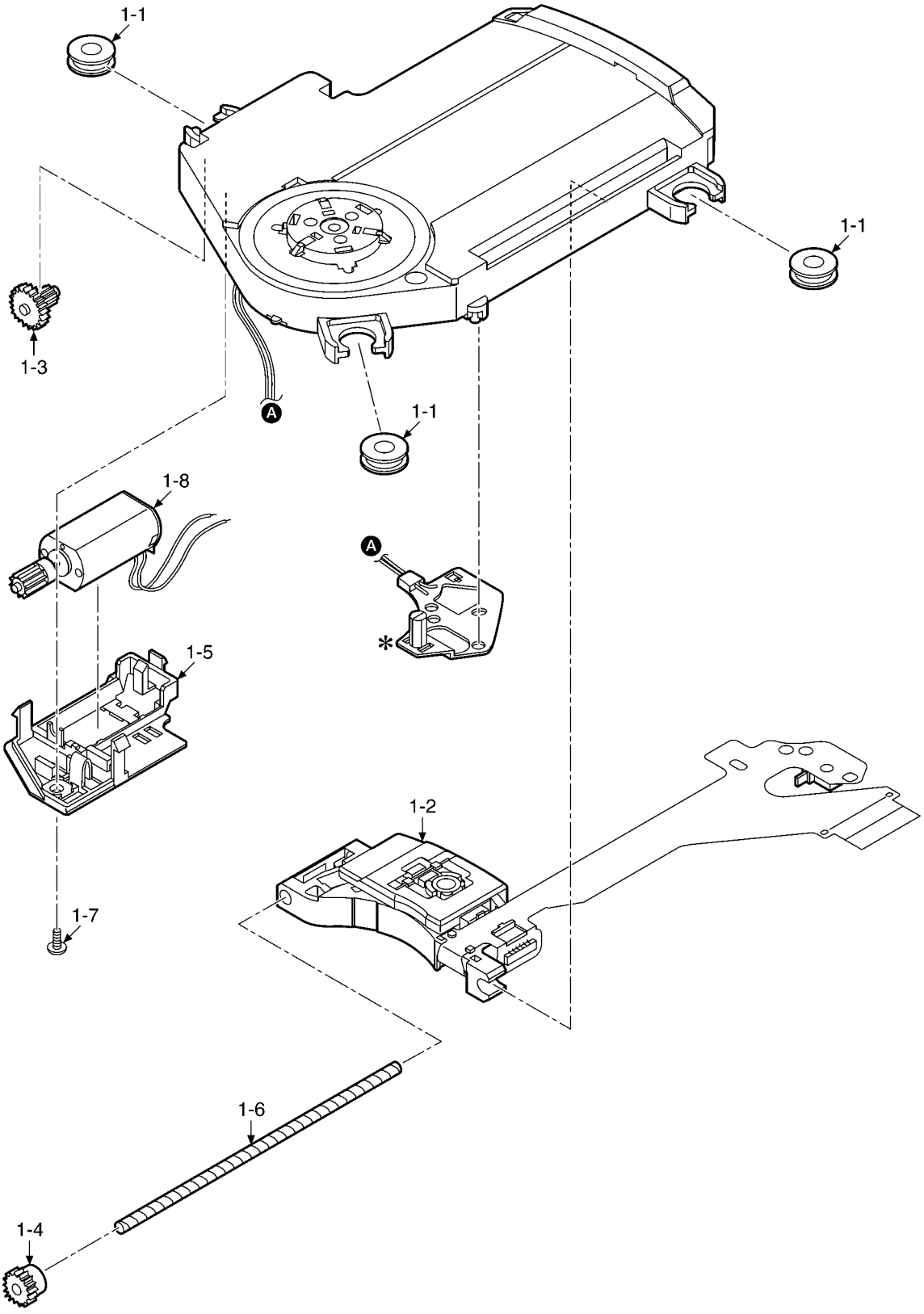
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
JK11	RJJ43K09-C	JK,DC IN	1	K2EB2B000006
JK12	K2FB2B000002	JK,EXT BATT.	1	
JK701	K2HC106B0019	JK,HEADPHONES	1	
L11	G1C331K00008	COIL	1	
L12	G1A101D00009	COIL	1	
L13	G1C101K00033	COIL	1	
L14	G1C101K00033	COIL	1	
L502	G1C101K00033	COIL	1	
L504	G1C101K00033	COIL	1	
L704	G1C471K00007	COIL	1	
L901	J0JCC0000077	COIL	1	
L902	J0JBC0000014	COIL	1	
L903	J0JBC0000014	COIL	1	
P1	RPF0111-2	SHEET	1	
P2	RPK2234	GIFT BOX	1	(EGS)(EBS) (EES)
P2	RPK2267	GIFT BOX	1	(EGA)(EBA) (EEA)
P2	RPK2325	GIFT BOX	1	(SGS)
P2	RPK2326	GIFT BOX	1	(SGA)
P2	RPK2327	GIFT BOX	1	(SGP)
P2	RPK2272	GIFT BOX	1	(SGY)
P3	RPQ1848	PAD	1	(EGS)(EGA) (EBS)(EBA) (EES)(EEA)
P3	RPQ1849	PAD	1	(SGS)(SGA) (SGP)(SGY)
PCB1	REP3872C-M	P.C.B. ASS´Y	1	[RTL]
Q2	UNR511400L	TRANSISTOR	1	
Q11	2SB1182TLPQR	TRANSISTOR	1	B1BDND000001
Q12	B1ABMD000004	TRANSISTOR	1	
Q13	UNR521L00L	TRANSISTOR	1	
Q14	UNR511400L	TRANSISTOR	1	
Q15	B1GBCFJG0004	TRANSISTOR	1	
Q16	UN5113TW	TRANSISTOR	1	
Q19	UN521MTX	TRANSISTOR	1	UNR521M00L
Q31	UN5215TX	TRANSISTOR	1	UNR521500L
Q201	2SB0709ARL	TRANSISTOR	1	
Q301	UN521MTX	TRANSISTOR	1	UNR521M00L
Q502	B1CFHA000002	TRANSISTOR	1	
Q704	B1GFGCAA0001	TRANSISTOR	1	
Q901	UNR511400L	TRANSISTOR	1	
Q902	UN5210TX	TRANSISTOR	1	UNR52100RL
Q903	UN5113TW	TRANSISTOR	1	
Q905	UN5215TX	TRANSISTOR	1	UNR521500L
R1	D0YBR0000010	CHIP RING	1	
R2	ERJ3GEY0R00	1/10W 0	1	
R10	ERJ3GEYJ271	1/10W 270	1	
R13	ERJ3GEYJ102V	1/10W 1K	1	
R14	ERJ3RBD563V	1/16W 56K	1	
R15	ERJ3RBD563V	1/16W 56K	1	
R16	ERJ3GEYJ104	1/10W 100K	1	
R17	ERJ12YJ2R2U	1/2W 2.2	1	
R21	ERJ3GEYJ100	1/10W 10	1	
R22	ERJ3GEYJ223	1/10W 22K	1	
R28	ERJ3GEYJ271	1/10W 270	1	
R29	ERJ3GEYJ560	1/10W 56	1	
R31	ERJ3GEYJ224	1/10W 220K	1	
R33	ERJ3GEYJ474	1/10W 470K	1	
R90	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R204	ERJ3GEYJ224	1/10W 220K	1	
R304	ERJ3GEYJ105V	1/10W 1M	1	
R306	EXBV8V473JV	1/16W 47K	1	
R307	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R313	ERJ3GEYJ104	1/10W 100K	1	
R317	ERJ3GEYJ104	1/10W 100K	1	
R319	ERJ3GEYJ104	1/10W 100K	1	
R321	ERJ3GEY0R00	1/10W 0	1	
R322	ERJ3GEY0R00	1/10W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R323	ERJ3GEYJ104	1/10W 100K	1	
R324	ERJ3GEY0R00	1/10W 0	1	
R325	ERJ3GEYJ333	1/10W 33K	1	
R327	ERJ3GEYJ104	1/10W 100K	1	
R328	ERJ3GEYJ104	1/10W 100K	1	
R329	ERJ3GEYJ104	1/10W 100K	1	
R330	ERJ3GEYJ104	1/10W 100K	1	
R332	ERJ3GEYJ102V	1/10W 1K	1	
R335	ERJ3GEY0R00	1/10W 0	1	
R361	ERJ3GEYJ102V	1/10W 1K	1	
R502	ERJ3GEYJ563	1/10W 56K	1	
R504	ERJ3GEYJ105V	1/10W 1M	1	
R505	ERJ3GEYJ681	1/10W 680	1	
R506	ERJ3GEYJ393	1/10W 39K	1	
R507	ERJ3GEYJ151V	1/10W 150	1	
R508	ERJ3GEYJ682	1/10W 6.8K	1	
R509	ERJ3GEYJ104	1/10W 100K	1	
R511	ERJ3GEYJ222	1/10W 2.2K	1	
R512	ERJ3GEYJ104	1/10W 100K	1	
R513	ERJ3GEYJ104	1/10W 100K	1	
R514	ERJ3GEYJ681	1/10W 680	1	
R515	ERJ3GEYJ104	1/10W 100K	1	
R516	ERJ3GEYJ104	1/10W 100K	1	
R517	ERJ3GEY0R00	1/10W 0	1	
R518	ERJ3GEYJ332	1/10W 3.3K	1	
R519	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R520	ERJ3GEYJ222	1/10W 2.2K	1	
R521	ERJ3GEYJ222	1/10W 2.2K	1	
R523	ERJ3GEYJ100	1/10W 10	1	
R524	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R525	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R526	ERJ3GEYJ222	1/10W 2.2K	1	
R527	ERJ3GEYJ222	1/10W 2.2K	1	
R528	ERJ3GEYJ104	1/10W 100K	1	
R529	ERJ3GEY0R00	1/10W 0	1	
R531	ERJ3GEYJ2R2	1/10W 2.2	1	
R532	ERJ3GEYJ220	1/10W 22	1	
R534	ERJ3GEYJ223	1/10W 22K	1	
R536	ERJ3GEY0R00	1/10W 0	1	
R701	ERJ3GEYJ561	1/10W 560	1	
R702	ERJ3GEYJ561	1/10W 560	1	
R703	ERJ3GEYJ5R6	1/10W 5.6	1	
R704	ERJ3GEYJ5R6	1/10W 5.6	1	
R705	ERJ3GEYJ2R2	1/10W 2.2	1	
R706	ERJ3GEYJ2R2	1/10W 2.2	1	
R707	ERJ3GEYJ102V	1/10W 1K	1	
R708	ERJ3GEYJ102V	1/10W 1K	1	
R806	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R807	ERJ3GEYJ123V	1/10W 12K	1	
R808	ERJ3GEYJ822	1/10W 8.2K	1	
R809	ERJ3GEYJ682	1/10W 6.8K	1	
R810	ERJ3GEYJ333	1/10W 33K	1	
R811	ERJ3GEYJ273	1/10W 27K	1	
R901	ERJ3GEYJ222	1/10W 2.2K	1	
R904	ERJ3GEYJ102V	1/10W 1K	1	
R910	ERJ3GEYJ222	1/10W 2.2K	1	
R956	ERJ3GEYJ330	1/10W 33	1	
RJ903	ERJ3GEYJ100	1/10W 10	1	
S201	ESE11MV9T	SW,LASER ON/OFF	1	
S202	K0L1BB000025	SW,REST DET.	1	
S310	RSS2A010-1A	SW,HOLD	1	K0D112B00071
S801	K0H1BB000072	SW,OPERATION	1	
S802	K0H1BB000072	SW,OPERATION	1	
S803	K0H1BB000072	SW,OPERATION	1	
S804	K0H1BB000072	SW,OPERATION	1	
S805	K0H1BB000072	SW,OPERATION	1	
S806	K0H1BB000072	SW,OPERATION	1	
X501	H2D169500017	OSCILLATOR	1	

18 Cabinet Parts Location



19 Traverse Unit Parts Location



Note : We do not supply those items of parts marked ✻.

20 Packaging